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GREEN PAGES + TWO DISCS

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July 1997

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Next month in **Acorn User**
Top review of Top Model 2; first of a three part series of the Acorn NetStation; get clubbing with the Acorn Club Scene and lots more including, on the cover disc, *Iron Lord*, action and adventure
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• education

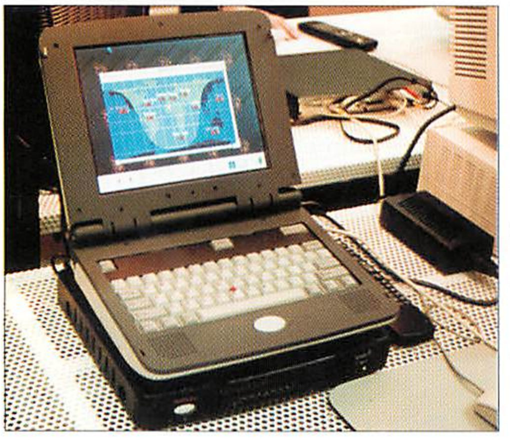
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Acorn portable revealed at last

The long-awaited new Acorn portable was revealed, as promised, by Acorn at the recent Wakefield Show. The as-yet unnamed computer is sub-notebook in dimensions and its capsule-style case has an unusual finish which looks like a light shade of aluminium from a distance. It reminds you of an over-grown organiser at first sight, though there the similarity ends. The portable has been developed for one of Acorn's new technology partners and might be described as a portable Network Computer. If it qualifies as such it could make history as the world's first portable NC.



Although the portable was on show, Acorn were not allowing a hands-on play with it. Close examination reveals a track-point-style micro-joystick in the centre of the keyboard for mouse pointer control. This is similar to Toshiba, IBM, Texas Instruments and some Compaq notebook PCs, but against the trend elsewhere towards a touch-pad mouse controller. Two mouse buttons appear to form an elliptical pad below the keyboard's space bar. The screen is a colour LCD of modest dimensions.

Acorn have to complete the portable project for their anonymous customer before work can start on adapting its specification for sale to the public via Chris Cox's products group. Although Xemplar have signalled they can manage without a new Acorn portable, Cox hasn't given up hope of persuading them that the portable will be an attractive schools computer. It's hoped that the portable will be launched officially at Acorn World later this year.

Malcolm Bird leaves

A highly respected name at Acorn, Malcolm Bird, is one of half a dozen staff within Acorn, some quite senior, who have been made redundant as part of the latest in a long line of restructuring moves. The redundancies are not specifically related to money-saving, according to an Acorn source, and were made with great reluctance and some sadness.

After de-centralising their corporate structure two years ago in order to differentiate their targeted new technology efforts from the old education business, Acorn are seeking to re-group around the Acorn brand now that it is no longer directly responsible for education products. David Lee, Acorn's managing director, is keen to promote the Acorn name as a respected and attractive international technology company.

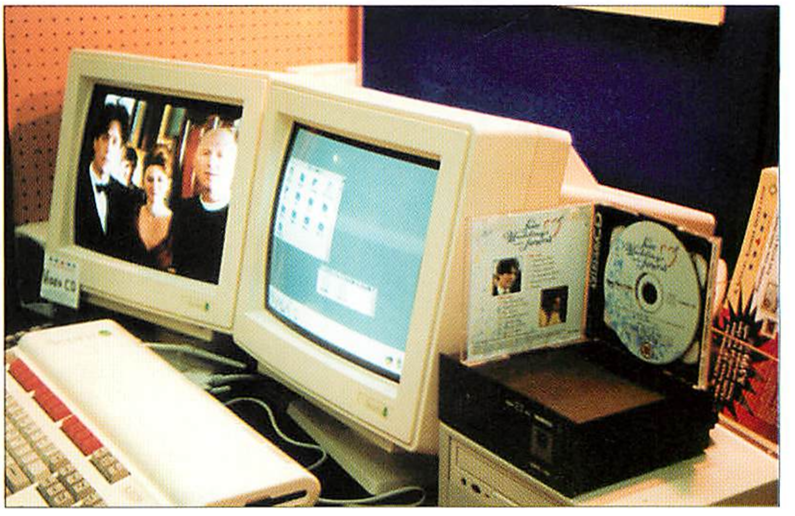
News of Malcolm Bird's departure was a shock. History will attribute much of Acorn's new-found direction in Network Computers to Bird who set out more than five years ago to promote Acorn technology as a basis for inexpensive multimedia-enabled alternatives to PCs. His work culminated in the formation of Online Media, which he headed. Although Online Media's progress was stifled by indecision in the interactive TV world, work done to produce the Online Media set top box (STB) was crucial to the lightning quick development of an NC prototype which won Acorn their Oracle lifeline.

Bird, it seems, was a victim of Acorn's shrinking management structure as the Online Media division was scaled down. Two of the other redundancies are related to Online Media. Although Bird has worked on the NC project, much of his senior managerial function was duplicated by Peter Bondar and we can only speculate that in the end there wasn't room for both.

The good news is that some of those made redundant are hopeful of future opportunities with Acorn in new roles. Meanwhile, the company are still recruiting new engineers and the head count could actually be up by as much as 30 new people by the end of the year.

MPEG movie box

Castle Technology were playing cinema blockbusters off compact disc on their stand at the recent Wakefield show. The company, who are heavily committed to peripherals which use the SCSI (small computer systems interface) expansion standard, have started to sell a MPEG (Motion Picture Expert Group) digital movie player box which connects to a computer using SCSI.



In fact, at this stage Castle Technology are selling the MPEG box as a stand-alone MPEG movie player connected to a SCSI CD-ROM drive, but they are working on software to enable the computer to control the movie playback and this should be available later this year. Playback quality we witnessed at the show was very good; with no picture noise or digital artefacts (weird visual errors) and good sound quality. The SMD-100 Video CD box is priced £249 + VAT.

Castle Technology, tel: 01728 621222, fax: 01728 621179

news

Affordable film scanner

Acorn developers, we need native drivers for this latest Epson baby! Flat bed scanners are now affordable and very popular for digitising images of art work and photos as well as textual documents. However, until now, scanners for digitising film — negatives and transparencies — have remained prohibitively expensive; Nikon's cheapest model coming in at around £800, for example. Epson are set to change all that with the introduction of a film scanner aimed at the home and business market which has a recommended price starting at just over £400. At the same time, they have announced a printer specifically designed for photographic quality output.

The new *FilmScan 200* is capable of scanning both 35mm slides as well as 35mm film strips — both positive transparencies and print negatives. An optional Advanced Photo System (APS) adapter is available too. APS is the new easy-use film standard developed jointly by the main film producers, including Kodak, which could eventually replace 35mm as main consumer film type.

The FilmScan 200 has an optical resolution of 1,200 dots per inch (dpi), which can be enhanced to an effective 4,800 dpi through interpolation techniques. The optical resolution equates to just under 300dpi when compared to a 6x4 inch print scanned conventionally, which is more than adequate for most applications outside professional publishing. Colour support is 30 bits per pixel, which exceeds the needs for all but the most exacting requirements.

Three FilmScan outfits will be marketed at first, including parallel port and SCSI interface versions for Windows PCs plus a Macintosh SCSI version. There is no native RISC OS support for the FilmScan 200 yet but, like many other important peripherals in the past, it must surely be a matter of time before this is rectified. In the mean time, PC Card users should be able to use Windows versions of the scanner.

Epson's new photo-specific printer is the Stylus Photo. Like all other current Epson ink-jets, it uses piezo-electric print heads. It can handle paper sizes up to A4 and features automatic picture adjustment of contrast, brightness and sharpness via a new driver. Epson have introduced a new photo-quality paper type which not only has a coated surface for maximum reproduction quality, but also perforated edges which can be detached to produce border-less prints.

It takes two minutes to print a photo and with a recommended price of £409, retail photo-finishers need not worry about mothballing their in-store equipment just yet, but Epson are showing that the digital photography revolution is advancing on more than one front. The Stylus Photo printer is designed to be an attractive match with both the new FilmScan 200 as well as Epson's *PhotoPC 500* digital camera, which is already supported natively under RISC OS by Acorn specialists.

Whether you have made the conversion to all-digital photography or you're sticking with conventional film, Epson are trying very hard to convince you of the need for some sort of digital photo accessory. *Epson (UK) Ltd, tel: 01442 61144.*

Compact scanner



A flatbed colour scanner for just £129 + VAT — sounds too good to be true? Well, there is a catch, or an advantage depending on your point of view. The 400dpi *Scanrom 4E* is just right for 6x4 originals, like the most common size of photographic print these days, but you can't scan anything larger. Artec say 6x4 is actually preferred by some because there is no chance of the print moving around when you close the scanner lid.

The scanner can also accept colour slides, though the 400dpi resolution will limit its usefulness. Risc PC users with PC cards should be able to use the Scanrom 4E and perhaps a native RISC OS driver will eventually be produced by a kindly Acorn software developer. Artec are looking for distributors and can be contacted at tel: 01952 588907.

3D browsing

Duncan McPherson, who from his e-mail address would appear to be at St Andrews university in Scotland, is inviting people to beta test his VRML (virtual reality markup language) browser for the World Wide Web. You will need a copy of Ace Computing/Oak Solutions' *!Euclid* package to use Duncan's software.

He says the browser currently allows you to export VRML1.0 files as Euclid files. Later he hopes to add support for a VRML2.0 parser, and a new completely re-written version of the Euclid module to support VRML2.0 nodes.

Andrew can be contacted at dfm@st-andrews.ac.uk or dfm@dcs.st-andrews.ac.uk and his home page is at http://www-2nd-cs.dcs.st-andrews.ac.uk/dfm/home.html

PhotoReal drivers

At last, from Spacetech, there is Acorn driver support for Canon's excellent new *PhotoReal* bubble jet printers. These new Canon printers use a combination of high resolution heads and extra intermediate colour inks to produce near-photo quality output of scanned images and other continuous tone art work.

The Canon models supported by Spacetech include the BJC240, BJC4200, BJC4550 and the BJC5500. Spacetech's PhotoReal software is priced £69 inc VAT and Spacetech can also supply any of the above printers. Spacetech, tel: (01305) 822 753, fax: (01305) 860 483, e-mail: sales@spacetech.co.uk

Acorn to the rescue

At a recent trade show, Digital Equipment had a spot of bother demonstrating their StrongARM NC. A Web browser produced by Oracle was to be used to demonstrate the NC, but according to Digital sources the browser was "unworkable." An Acorn browser was hastily secured to successfully demonstrate the Digital NC!

Acorn come second?

While there had been worried talk of Oracle messing around with Intel-based NCs, last month we revealed that Digital, who produce the 'Strong' version of the ARM processor, had done a deal with Oracle's NCI division to produce a new StrongARM NC reference design. So Oracle haven't abandoned RISC in their NC strategy after all — hooray!

But hang on a minute — the Digital/NCI deal mentions something called NCOS2. The original NCOS you will find inside any Acorn-derived NC is an adapted version of RISC OS. Unfortunately, NCOS2 is not a disguised version of StrongARM RISC OS. Oracle own the NCOS trademark and, indeed, NCOS2 is a specially tailored version of BSD Unix for StrongARM. This was hinted at a couple of months ago in our item about new firm, Causality, who have been set up to work in this field.

With NCI signing up a Digital StrongARM design using a non-Acorn operating system, the immediate thought is, where does that leave Acorn and their StrongARM aspirations? 'Where we have always been', says Acorn's head of corporate affairs, Kevin Coleman, who points out that Acorn's relationship with Oracle and NCI is as strong as ever.

It takes no great intelligence to speculate that Acorn have a StrongARM NC design up their sleeve. However, they discreetly point out that they are not tied exclusively to their Oracle and NCI commitments. All the intellectual property developed by work for Oracle and NCI can be re-used by Acorn, and Coleman says they are very confident in making full use of the technology at their disposal. Digital have produced a design which appears to be aimed at high-end corporate customers, whereas Acorn have tended to concentrate on low-cost, TV-centric products and, of course, they are is far more likely to be able to do OEM deals than Digital. There's plenty of room for both.

Intel copy Acorn?

When Windows 95 was revealed by Microsoft, Acorn users marvelled at the similarities shared by the new version and trusty old RISC OS – icon bar, pop-up menus, anti-aliased fonts (though far less flexible), solid drag windows and more. Now it seems Intel just might have taken a cue from Acorn regarding central processor installation.

They have launched a third development of their now famous Pentium processor, though for some odd reason have decided to call it Pentium II. Anyway, the most obvious feature of this new Pentium is that unlike all its predecessors, the chip is mounted on a small daughter card which itself is plugged perpendicularly into a slot on the system board. Does that sound familiar — look inside a Risc PC just to remind yourself. Intel say they chose this configuration to solve heat dispersal complications caused by the new chip. At least that's one problem even a StrongARM Risc PC doesn't share with Intel's new baby.

Oh, and another bug has been found in the Pentium II's floating point co-processor, following on from the embarrassing episode Intel had to endure nearly three years ago when a similar problem was discovered in the original Pentium design.

British consumers revolting

Acorn users know just how long their computers can last before suffering from terminal obsolescence. Ten-year-old Archimedes, with a few subtle modifications are still working today. How many 10-year-old PCs are there out there running Windows 95? In fact there are many five-year-old PCs which can't run Windows 95.

So it's no surprise that PC owners are complaining that the useful life of their computers is just too short. Instead of giving in to the short lifetime cycle of the PC, British PC owners are keeping their computers for more than twice the time estimated to be the average life cycle for a PC, according to a study by GfK Marketing Services. This has caused a slow down in the growth of the UK PC market during the last year, though PCs still out-perform many other staple electrical and electronic products.

GfK IT specialist, Martin New, explained: "Our figures show that the majority of PC owners tend to keep their machines for about four years. However, the average market life cycle of a personal computer is around 18 months. Most households can't keep up at this rate, considering that the average retail purchase price for a PC is in the region of £1,400." The growth of the UK PC market has been slashed from 110 per cent in the year to January 1996 to just 20 per cent in the same period to January 1997, according to GfK. Just one in four PC owners changes their computer within two years and this sector consists largely of eager early-adopters aged under 34 years. In fact a survey of PC owners revealed that the perceived life span of their purchases was as much as eight years.

"British consumers are simply not used to replacing expensive electrical goods very often. Our research tells us that the majority of households will keep their TV sets for at least 10 years. Similarly, 68 per cent of camcorder owners will keep it for five years or more," said New. So the average life cycle of a PC is just 18 months. Hands up those using an Acorn rather older than 18 months! Your news editor even has perfectly usable Archimedes A420/1 which will soon celebrate its seventh birthday!

Joystick interface

Stuart Tyrrell Developments (STD) have launched a new joystick interface for using PC joysticks with RISC OS computers. The interface plugs into the parallel printer port and although there is no through connector, STD can supply a suitable switch box if required.

Besides supporting Acorn programs, *PCJoy* can also be used in conjunction with software running on a PC Card. A full game port is provided enabling the use of joysticks which use four channels or the use of two joysticks using a standard splitter cable. The microcontroller-based device could be enhanced later in the year with a game port MIDI upgrade.

PCJoy is priced £39.95. STD, e-mail: Stuart@stdevel.demon.co.uk, Web: http://www.stdevel.demon.co.uk, tel: 0976 255 256

New SCSI cards

Both Castle Technology, very dedicated to the SCSI standard, and CD ROM specialists Eesox, are developing their own new SCSI 2 cards. Apparently neither are satisfied that the competition have produced the ideal SCSI 2 product.

Eesox cite unreliability in third-party products as a major factor in their decision to produce their own card. Castle Technology were demonstrating their prototype at the recent Wakefield Show and Eesox say their card should be available by the end of July, priced competitively at £125 + VAT

New IDE interface

Preston-based Simtec have released their new range IDE interface cards which are suitable for any RISC OS computer from the oldest A305 to the newest Risc PC. The cards are dual channel devices which can support up to four IDE devices, like hard discs or CD ROM drives, to be fitted.

If required, you can opt for an extra LED to be fitted to indicate drive activity. Firmware is on Flash ROM to enable easy software upgrades. Simtec say the cards are very easy to install and they even have a version for old A300 machines which don't have a podule backplane fitted. Simtec, tel: (01772) 812863, fax: (01772) 816426, e-mail: info@simtec.demon.co.uk

Selection dated 26th May 1997. Visit our web site for the latest full price list and special offers: http://www.ianco.co.uk

Acorn StrongARM Risc PC

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Jaz drive recall

Iomega have revealed that a batch of their removable disc cartridges for the Jaz drive model could develop faults within normal usage and so will be replaced with a complimentary disc. The fault has been pinpointed as a sub-standard component which could result in performance degradation and even data loss.

You can identify potentially faulty Jaz discs by examining the back of the casing and looking for a date and manufacturing code. The danger period is March 13 to April 20 and under the date markings a code ending with the letters 'MS'. If customers think they have a faulty disc, they should contact Iomega via a hotline to their Irish support facility on tel: (00 353) 1 807 5599. Iomega can also be contacted via e-mail at eurosupport@iomega.com.

StrongARM notebook

Acorn are apparently not the only company working on an ARM-based notebook computer. Reports from the US suggest that the Canadian Corel Corporation are developing a StrongARM-based notebook computer. A version of the OS/9 operating system will probably be used to run Java and even Windows applications. The new machine is likely to make its debut at Comdex Fall in November.

How much seriousness can be attached to the reports is debatable. Corel originally announced they were to bring out a Java-based personal digital assistant (PDA), but this has now apparently been shelved. Comdex Fall is still six months away — a long time in the computer industry. Of course, Acorn might really be the only ARM notebook developers after all, and Corel might be the secret customers, but Acorn wouldn't tell us even if we asked.

World's first DVD RAM drive

By the end of June Hitachi are expecting to start shipping sample quantities of their new *GF-1000DVD-RAM* drive for PCs. The device is designed to conform to the specifications for DVD-RAM which were announced recently by the DVD (digital video disc) Forum. DVD-RAM, as opposed to ROM, is rewritable DVD offering a maximum capacity of 2.6Gb per side of a 5.25 inch DVD compact disc. Hitachi's announcement follows the company's recent release of their *GD-2000* double-speed DVD-ROM drive.

The GF-1000 has a double-speed transfer rate of 2.76Mb per second. A 650 nanometre laser is built into the read/write head for data reading and conventional CD ROM compatibility is included. Alongside this is a second, 780 nanometre laser, which deals with CD-R (eg. Kodak Photo CD) read-only functions. Conventional CD-R recording is not supported, however. Hitachi believe demand for DVD drives will reach 70 million units by the year 2000 and of these some 30 million could be of the rewritable RAM type.

Internet TV launch

Curtis Mathes, the US company who have commissioned Acorn to develop an Internet add-on for domestic TVs, have unveiled the first fruits of the project called *UniView*. This provides access to the Internet from your television and also allows you to talk on the telephone and view TV programme guides. In Curtis Mathes' own words, the $399 (£240) UniView box is aimed at the ultimate couch potato.

Despite interest generated by Microsoft's recent decision to invest in Internet TV through their acquisition of WebTV, observers are far from convinced that there is a big enough market yet. A Curtis Mathes spokesman commented: "This is a big deal for the company. It's a gamble, yes. It has to be proven out."

Curtis Mathes believe Microsoft's *WebTV* product itself is the explanation behind the current Internet TV market pessimism. The Curtis Mathes spokesman explained: "We believe the WebTV is the wrong product for this marketplace and that's why it hasn't taken off." He added that as they were TV manufacturers in their own right, Curtis Mathes had produced a design which was right for TV viewers rather than computer users. "These are people who would be the last people to buy a computer. That happens to be most people in the United States," added the spokesman.

UniView can be used to explore the Web, use e-mail, send faxes, make phone calls and access the Curtis Mathes Xpressway, which is described as a resource for entertainment, sports, business, news and shopping. The box is even equipped with a credit card reader for online purchasing.

News of the official launch of UniView will be big boost to Acorn, who apparently have a number of lucrative technology development contracts with third-party companies, but are not allowed to publicise them.

European lag for WebTV?

Forrester Research in the US have declared that in the medium term it will be slow-going for Web-TV. As Europe tends to lag behind the US, it's even more gloomy for this side of the Atlantic. Forrester's Web-TV pessimism placed a question mark against the sense in Microsoft's recent announcement that it intends to invest $425 million in the acquisition of WebTV Networks, based in Palo Alto, California. It also served to dampen optimism for the Acorn-developed Curtis Mathes UniView Internet TV solution launched this month (see above story).

"Web browsing is simply not compelling enough to attract today's TV viewers," said Josh Bernoff, senior Forrester analyst. He added: "It will take three years for the industry to create hardware and content that can deliver what consumers really want — interactivity that enhances their television experience." Bernoff suggests that simpler, more utilitarian devices like Internet screen phones would have a faster route to market. Devices like these would deliver quick access to directories, weather and integrated voice, Internet and e-mail services. Forrester predicts a million screen phones could be in existence by 1999.

Web TV's time will eventually come, according to Forrester, but that may not be until at least 2002 and the potential market could be 14.7 million homes. "These changes will challenge TV networks to broaden their interactive competency and put pressure on computer makers to simplify their interfaces," Bernoff explains. He predicts that new interactive service providers will eventually evolve using inexpensive net-enhanced devices like phones and TVs to challenge conventional on-line services like America Online.

Contacting me

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OPTION 1

Family Software Pack:
DK Ultimate Human Body
Multimedia TextEase
Artworks
Worth £266.73

OPTION 2

17" SVGA Multiscan Monitor (AKF93)
For the price of a 14" SVGA Multiscan Monitor (AKF60)
Worth £158.63

OPTION 3

Free BJ-4100 Canon Bubblejet Colour Printer
Worth £292.57

OPTION 4

Free QV10A Casio Digital Camera including serial link, Photo QV Software and Application Guide
Worth £376.00

Acorn Network Computers ONLY £468



WEB ZONE

Beebug have created a new Web Zone within their showroom in St Albans. This is a new area dedicated to providing public Internet access - particularly of benefit to those people who do not want to buy the equipment needed, or for those who would like to have a go before purchasing a complete system. At only £4 per half hour and £7 per hour, pre-booking is recommended. Please phone 01727 840303 for more details or to book your time.

NEW Acorn A7000+

This is the first production Acorn computer with an integrated Floating Point Accelerator. The combination of a fast 7500FE processor and high-speed EDO DRAM give a dramatic improvement in desktop performance, but with no increase in price! The A7000+ offers: 8Mb EDO RAM, 1.2Gb IDE hard drive, RISC OS 3.71, Floating Point Accelerator, Integrated 16-bit digital stereo sound, 1.6Mb floppy drive, VGA, SVGA, and other resolutions

A7000+ 8Mb HD1.2Gb	*£1099.00*
A7000+ 8Mb HD1.2Gb 8xCD	*£1199.00*

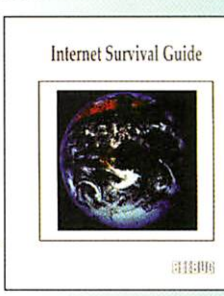
17" Monitors - Only £399 inc VAT

If you are looking to upgrade your current monitor or purchase a new system then you can't afford to miss this special offer! Fully tested and compatible with Risc PC's (and PC's). We will even trade-in your existing monitor as follows: Standard 14" £45, Multiscan 14" £95. (Subject to inspection).

Internet Service

We have initiated a complete set up service. Send or bring your computer to us and we will return it all set up ready to access the Internet, send emails, and surf the Web.
What you'll get:

- An account with Demon Internet
- USR 33,600 external modem
- Internet accessing software
- Email accounts for up to 9 users
- Up to 5Mb of Home Page space available
- Your own Home Page created
- One years unlimited access to the Internet, Email, WWW
- Your computer completely configured ready for use
- Internet Survival Guide
- Free 'get you started' help line for 10 days



Subject to demand we will return your computer to you within 3 working days (from our receipt of your computer), at £15 for 24 hour insured courier delivery.

All we need from you are some basic details and Home Page text and layout. Please telephone us for further details and an Internet Service Order Form.

We can configure any Acorn computer that meets the following specification: 4Mb RAM, Hard Disc with 10Mb free, RISC OS 3.1 or later, working serial port.

Code INTAg Internet Service £525.00 inc VAT

PC Internet Service also available

BEEBUG Ltd., 117 Hatfield Road, St Albans, Herts AL1 4JS
Tel: 01727 840303 Fax: 01727 860263 Email: sales@beebug.co.uk
Chargeable Support Hotline 0897 596 000
All prices inc VAT Courier delivery £11.75

New products /upgrades

PRODUCT	NEW FEATURES/PRODUCT DETAILS	PRICE	CONTACT
Professional Typography CD	• Contains professional quality Acorn fonts • Fonts in two formats – RISC OS 3 and Publisher • Comes with wall chart containing all EFF fonts	£69 (private users), £99 (schools), £149 (companies). Prices include VAT. Individual fonts – £7 +p&p + VAT per weight.	Electronic Font Foundry Tel: (01344) 875201
Village Life in India CD-ROM	• A spectacular tour of southern India involving games, activities, graphics, interactive stories, video clips and authentic Indian music	£55	Cambridge University Press Tel: (01223) 325914
Coypu	• Educational equation and data plotter is now published by October Pen Software • Supported and developed by the original author • Full details and free downloadable demo from Web site	Single user £50, school site licence £120, dual format (PC & Acorn) site licence £170	October Pen Tel: (01705) 592521 WWW: http://www.octpen.demon.co.uk
128Mb SIMM for Risc PC	• A low profile board using the latest 256MBit chips • Only 16 of these devices are required to provide the 128Mb	£899 inc VAT and carriage	Clares Micro Supplies Tel: (01606) 48511
WebMaster	• Web site editor • Extensive site management • From creating your site through to publishing it on the Internet	£99 + VAT. Special price of £89 + VAT for members of the Clan or CD Circle	Innovative Media Solutions Ltd Tel: (01934) 522880
ProCopy	• For making multiple copies of a disc • Designed for use for organisations to make copies of a subscription disc or circular • Enhanced version of !Copier	ProCopy is Shareware, allowing 30 days evaluation. Standard registration for a single computer costs £15.	David Holden, 39 Knighton Park Road, Sydenham, London, SE26 5RN. Tel: 0181-778 2659
Textfind	• Search text files (individual, lists or directories) for a word or phrase • Enables you to produce a list of references with the filename and line numbers where match was found • Use list to jump to sections of files you wish to read	Shareware allowing 30 days evaluation, then £5 for registration	David Holden, 39 Knighton Park Road, Sydenham, London, SE26 5RN Tel: 0181-778 2659
HTML Designer (v0.04)	• Internet publishing system	£25	ARM Solutions Tel: (01384) 865580
Task Force Clipart	• Produced by Canadian company NVTech • Over 10,000 images plus a bonus of 500 photographic images	£30 inc VAT, includes catalogue of entire collection	Akalat Publishing Tel: (01582) 881614
CDFast 2	• Improved version with added functionality for faster CD-ROM drives • Significantly improves performance of most CD-ROM applications	£25 + VAT and only £15 + VAT with an Eesox CD-ROM drive	Eesox Tel: (01954) 212263
Clicker plus resource packs	• Includes a phonics pack and poem pack • Nursery rhymes are enhanced by sound effects in first clicks resuorce pack	Packs start at 325 +VAT	Crick Software Tel: (01604) 671691

Cumana land exclusive deal

Cumana are to be sole authorised development partners and distributors for SyQuest removable storage product technology in the Acorn market. The *EZFlyer 230* is SyQuest's answer to the Iomega Zip drive that stole the removable market from under SyQuest's nose in an amazing PR coup.

Cumana have already adapted the SyQuest EZFlyer 230 3.5 inch removable hard disc cartridge system for use in later model Acorn computers with bidirectional parallel ports.

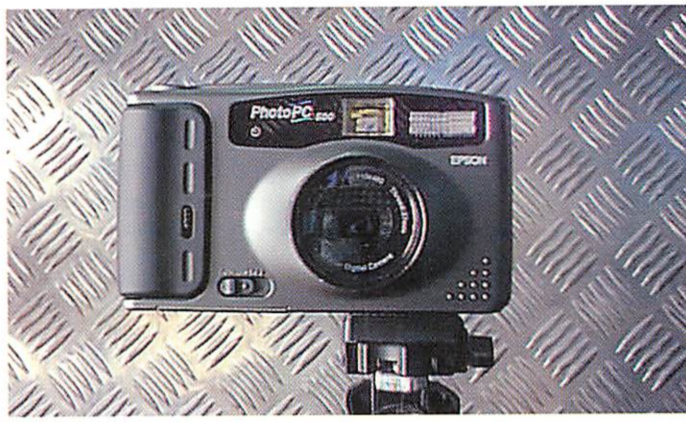
As its name hints, the drive cartridge has a capacity of 230Mb, more than double that of the Zip drive. The question is, can SyQuest regain the ground lost to Iomega?

Cumana are now supplying Acorn-specific drives complete with one cartridge for £219 + VAT. Additional cartridges cost £20 + VAT each.

NEW! - Epson Digital Camera

High resolution, 24 bit colour digital camera

- High quality colour digital camera - as easy to use as a conventional 35mm compact.
- 24 bit colour sensor providing 16.7 million colours.
- Optical resolution of 640 x 480 pixels - twice that of many other comparably priced digital cameras.
- Connects to RS232 port - no interface to fit.
- Built-in four way flash - automatic, always, never, and red-eye reduction modes.
- Self-timer, erase last/every picture functions.
- 37mm thread accepts camcorder lenses and filters.
- Standard 2Mb memory stores up to 60 standard resolution (320 x 240) pictures, or 30 high resolution (640 x 480) pictures, or any combination.
- Optional 2Mb and 4Mb memory upgrades, which allow up to 200 pictures to be stored.
- Tripod mounting boss.



Package includes our *Snapshot* application software, allowing you to quickly download pictures and view them as thumbnails. Selected pictures can then be easily saved as either Sprite or JPEG files.

Introductory price £499, including carriage and VAT. Includes camera, a set of batteries, serial lead, all necessary software, and manual.

24i16 Multimedia Card

Combined 24 bit digitiser and 16 bit sampler



- Advanced 24 bit video digitiser with stereo 16 bit sound sampler.
- Captures brilliant still images from any S-VHS or composite video source, plus superb Replay movies, and hi-fi audio.
- 1Mb framestore captures still images at full PAL resolution, 768 pixels x 576 lines.
- Replay movies (including sound) can be recorded, image size and frame rate are fully adjustable and are limited only by hard disc and system bandwidth.
- Sound sampler records at sample rates up to 48kHz.
- Hardware video scaling and anti-aliasing, plus real-time control of brightness, contrast & saturation.

Package price £472.94, including carriage and VAT. Includes expansion card, all necessary software, and comprehensive manual.

ColourMobile

Motorised 24 bit colour hand scanner

- 24 bit colour scan head providing 16.7 million colours.
- Resolutions from 100 to 400 dpi (interpolated).
- Connects directly to bidirectional parallel port - no interface to fit.
- Works with printers, dongles, and parallel CD-ROM drives.



"Intuitive and remarkably easy to use... scans are outstandingly sharp with excellent colour accuracy... What more can I say?" - Archimedes World.

"Operation is extremely easy... the results were excellent..." - Acorn Publisher.

"The detail is impressive... this is a good scanner for schools and home DTP users." - Acorn User.

Special price £199, including carriage and VAT. Includes scanner, interface, all necessary software, and manual.

For the Complete Picture...

Irlam Instruments Ltd, Brunel Institute for Bioengineering, Brunel University, Uxbridge, Middlesex, UB8 3PH. Tel/Fax 01895 811401. Email: sales@irlam.co.uk

Please note: All products require RISC OS 3.1 or later, a hard disc, 2Mb RAM minimum (4Mb recommended). Check suitability for your computer before ordering. All hardware products come with a full 1 years guarantee. E & OE.

Access

VISA

PHONE ORDERS: 01728 621222

CASTLE TECHNOLOGY

FAX ORDERS (24HR): 01728 621179

NEW SINGLE-PASS versions

FROM £199

SCANFLAT II

SCSI Flatbed scanner plus SCSI II Interface



The single pass high quality Scanflat II range of A4 flatbed scanners is a new and improved version of the highly successful Scanflat series. With a new compact footprint to save space, improved scanning speeds and quiet operation, the Scanflat II provides both quality and ease of use for the busy office or classroom. Available now in 600dpi and 800dpi versions.

- New versions with 400x290mm footprint
- High resolution Scanflat 1200 still available
- Line art, grey or 24-bit colour modes
- Pre-scan colour/brightness control
- Free ImageMaster Software & TWAIN driver
- PC SCSI interface & software kit £45 extra
- 25 way SCSI cable included
- Full 1 year guarantee

Scanflat 1200



Scanflat II with Transparency adaptor



Price in brackets includes VAT	Scanner Price	Trans. Adaptor
Scanflat II 600 (600dpi)	£199 (£233.83)	£149 (£175.08)
Scanflat II 800 (800dpi)	£299 (£351.33)	£149 (£175.08)
Scanflat 1200 (1200dpi)	£349 (£410.08)	£199 (£233.83)

Use the Scanflat to scan great photos like this!



SCSI INTERFACE required

REMOVABLE DRIVES

FROM £129



ZIP



MaxIT



EZ Flyer



PD Drive

ZIP DRIVE. A fast portable drive from Iomega which uses special 100Mb discs similar in size to the familiar floppy. A top selling drive using proven technology. 1Gb **JAZZ** drive also available (call).

MaxIT. A recent product from MCD combining portability with very high performance. It will accept either its own 540Mb cartridges or SyQuest 270Mb cartridges. External drives are in bright yellow or dark blue.

SyQuest's **EZFlyer** is the higher capacity successor to the popular EZDrive. It uses its own 230Mb cartridges, but will also accept EZ135Mb cartridges.

The **PANASONIC PD** drive is both a fast 4x speed CD-ROM drive and a high capacity 650Mb optical drive all in one. It not only accepts standard read only CD-ROMs but can also both read and write to its own Panasonic PD 650Mb optical discs.

Zip drive in case



SCSI INTERFACE required

COMBO COMPLIANT Installation FREE in the Combo Box

UNLIMITED STORAGE CAPACITY

- Fast back-up for your data
- Low cost - from only 4p per Mb
- Easy to install, easy to use
- 1 year warranty
- 25-way SCSI cable included
- Compact portable versions are available (except Panasonic PD)

Price in brackets includes VAT	Data transfer rate	Media capacity	Media price	Compatibility	Price: portable version (incl VAT)	Price: Internal (bare drive) (incl VAT)	Price: External (Combo case) (incl VAT)
Iomega ZIP	up to 1.4 Mb/sec	100Mb	£12	n/a	£129* (£151.75)	£129 (£151.75)	£189 (£222.08)
MaxIT	up to 10 Mb/sec	540Mb	£49	SyQuest 270Mb media	£309 (£363.08)	£249 (£292.58)	£309 (£363.08)
SyQuest EZFlyer	up to 2.4 Mb/sec	230Mb	£18	EZ 135 media	£249* (£292.58)	-	-
Panasonic PD	up to 1.1 Mb/sec	650Mb/680Mb	£29 (650Mb optical)	CD-ROM	£345 (£405.38)	£345 (£405.38)	£405 (£475.88)

MPEG PLAYER

£249



The SMD-100 Video CD MPEG decoder can be used as a stand-alone unit connected to a SCSI CD-ROM drive or as a device in a chain of SCSI peripherals connected to your Acorn. The unit can be connected to a SCART TV or an Acorn 15kHz monitor to play your VideoCD film in 24-bit colour and 16 bit stereo.

- **FREE - Video CD (film)**
- **SCART / monitor cable £12 (£14.10) (specify model)**

SCSI INTERFACE required

- Decodes CD-i and Video CD
- NSTC and PAL compatible
- Requires 2x SCSI CD-ROM or faster
- Use with SCART TV screen or some RGB monitors
- I/R remote control included
- GENLOCK 'In' socket

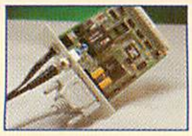
MPEG Player	£249	(£292.58)

ETHER SCSI CARD

FROM £148

A unique two-in-one solution from Castle Technology's New Products Team providing both networking and expansion on one card. For all Acorn computers (except A30x0 / A4000).

- Access, Omniclient, AUN etc compatible
- Co-ax and twisted pair ethernet sockets
- Internal and external SCSI ports
- Acorn DC14 compliant
- Conserves precious slots



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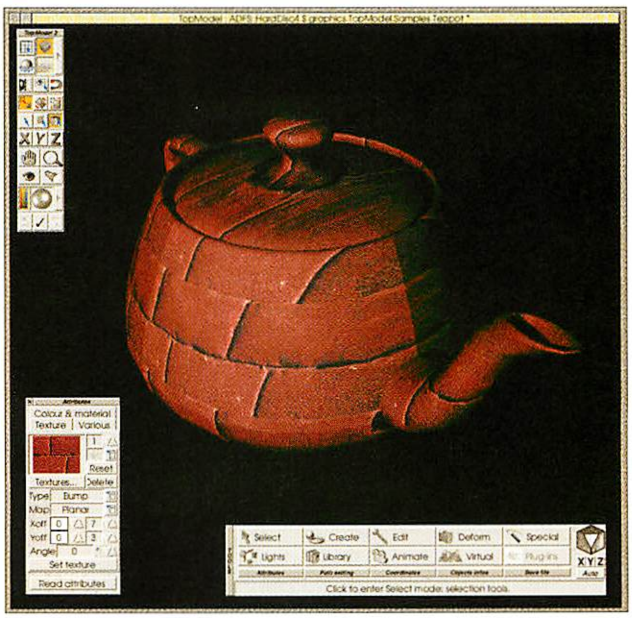
Delivery £10 (£11.75 inc VAT) per order.
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The model 3D application?

It has been a long wait but *TopModel 2*, the program which Italian authors Sincronia claim to be the best 3D modelling solution for the Acorn platform, has finally landed on British shores. Spacetech, the UK distributors started shipping the final release version late in April, the product having improved considerably over the pre-release version reviewed by Paul Wheatley on this page several months ago.



From the outside, this new generation of TopModel looks very similar, with the same box and manual graphics. Only a colour sticker saying 'New Version 2, Gemini inside' distinguishes it from its predecessor. Also in keeping with the original version, the manual is strewn with errors, grammatical and otherwise. It is far easier to follow than the last manual, even though it really should have been edited by an English speaker.

The application itself is easier to load than before, when the tortuous Gordian protection system was used, and much simpler to use once loaded. The interface has undergone a necessary but radical redesign and despite there being even more tools and functions available than before, the intuitive toolbar and menu systems work wonderfully. It makes the program a joy to use rather than a misery.

As far as speed goes, this is certainly one of the fastest graphics engines available on the Acorn platform and even the most complex scenes, with tens of thousands of polygons, can be managed by StrongARM machines quite comfortably. This is thanks to the Gemini graphics engine which also supports real-time reflections, lens flare and fog effects and is ready to receive a radiosity rendering plug-in for much warmer (but slower) shading.

With the application comes a variety of TopModel designed example and tutorial files to inspire and teach the fundamentals through to the most complex functions. There is also a browser which allows, among others, the reading of VRML files as well as TopModel scenes. The fast and simple import and export applications cope with a wide variety of industry-standard modelling formats including VRML, DXF, Lightwave and Sculpt3D.

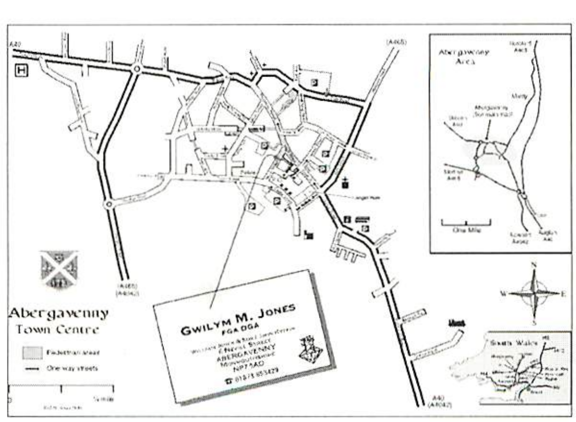
One complaint about the package is its fragility. It would have been nice to test a release product that never crashed or hung the computer. More details on how it behaves and what can be achieved with TopModel 2 in the full review next month. More importantly, the review will judge whether the long wait for TopModel 2 was worth it and if the package will carry 3D graphics on the Acorn through the next year or so as it promised it would.

Spacetech
Tel: (01395) 822753
E-mail: sales@spacetech.co.uk

The first ever map of the month winner

This is the first DTP winner of the new extended pic of the month competition since we opened it up to DTP, Web site and icon entries. Mr Gwilym Jones created this detailed street map using *!Draw* aided by Kell Gatherer's *!Streetmap* application which converts lines into roads. If only real road building was that simple!

The hardware was either A5000 or StrongArm RPC depending on where the construction work was taking place. Over the years it has helped Mr Jones' visitors to navigate the pedestrianised town-centre with ease. The map is available as a Draw file from the AU Web site.



New version of classroom Impression DTP Guide

Impression Style and *Publisher* are two of the most commonly used DTP products in secondary schools. Dr Wood's original Impression guides have been fused into one covering both the Style and Publisher applications.

This 64-page, wire-bound booklet with an attractive colour cover goes through all the ins and outs of the Impression series in a very well-organised and readable manner. All the pages have large print and screenshots making it an ideal desktop guide which is easily referenced and equally easy to read.

It is quite obvious that the guide has been written by a practising teacher who knows the way that both children and teachers absorb information. It is also very good value at only £9.95.

Paragon Publishing
Tel: (01604) 832149
E-mail: Mark-Webb@MSN.com

Free mousemat with PublishArt 3

In the reviews section this month I look at Smart DTP's new clipart CD-ROM. As a promotional stunt, the very useful, bright and colourful *PublishArt 3* mousemat will be bundled with the package if you mention *Acorn User* magazine when ordering.

Smart DTP
Tel: (01332) 842803

Contacting me

You can contact the graphics and DTP page by writing to me, Jack Kreindler, at *Acorn User*, Media House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to augrafix@idg.co.uk.

CUMANA

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SyQuest®

LATEST NEWS

bring you the....

ezflyer 230MB REMOVABLE CARTRIDGE HARD DRIVE



OFFER PRICE £219 PLUS CARRIAGE +VAT

The offer price of £219
(normally £239 plus carriage & VAT) is only available until May 31st 1997.
For further details or a full specification please call the Cumana team on:
Tel: 01483 503121.

Cumana are pleased to announce the availability of Acorn drivers for the SyQuest EZFlyer 230MB parallel-port removable cartridge hard drive.

We are the Sole Authorised Development Partner and distributor for SyQuest Technology for the Acorn market.

These high capacity, high performance drives have an excellent media cost - a fraction over 10p/MB when bought as part of this offer. They use a well-proven drive technology giving 13.5ms access time and the media is widely available. The **ez**flyer is an ideal solution for those wishing to add further drive space or take essential regular backups of important data and applications.

The Cumana drivers are compatible with a wide range of Acorn computers from the A3010 to the StrongARM-powered RiscPC. A bi-directional parallel port is required so unfortunately this drive is not suitable for A300/A400/A3000 or A540 computers - but please do give us a call for a quote on a SCSI version of the drive. The drive also features a through port for attaching a printer and is supplied with PC/MAC drivers PLUS one free 230MB media disc.

Special Offer Price Oscar CD-ROM Package



Oscar CD-ROM Drive
(includes headphones and PC/Acorn driver software) + Free Choice of 4 from 14 Anglia Multimedia CD-ROM titles for just....

£299.00
(Inc. Carriage-Excluding VAT)

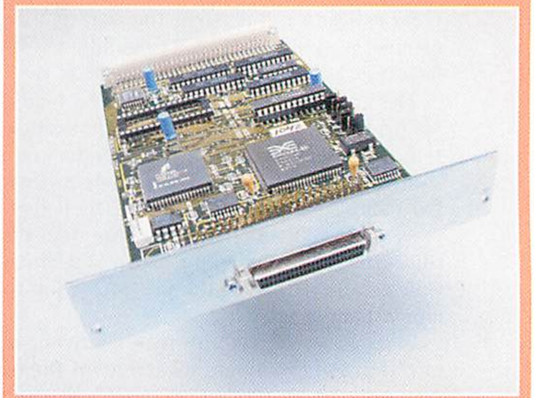
Indigo

The Indigo ATAPI internal fit CD-ROM drives offer 8 speed performance and are ideal for the Acorn Risc PC and A7000. StrongARM compatible.



Indigo CAA380i (as detailed) £99.00+ VAT
(Order code: 3-1518-A)
Indigo CAA380iA (as detailed plus audio mixer and Clares ProArtisan 2CD)
£149.00 + VAT (Order code: 4-1519-A)

SCSI II interface card for Risc PC



Features:

* The SCSI driver is fully Risc OS compliant to support the Risc PC 600, 700 and StrongARM
* Supports up to 256kB of on-board Flash EPROM along with **FREE technical support** and upgrades from floppy disc or can be downloaded from the Cumana Website
* 32 bit DMA transfers supported on the Risc PC giving 7Mb/sec
* Built-in security for CMOS RAM and EEPROM
* Supports 8 logical drives on the icon bar
* New icon bar management features include the ability to "stack" multiple drives to save icon bar space
* Support for DOS format media (e.g. proTeus, SyQuest and Jazz)
* Drive mapping and configuring from the icon bar plus support for user defined user icons

SCSI II interface £149.00 + VAT
(Order code: 3-1040-A)
SCSI II cable £15.00 + VAT
(Order code: SCSI2-50)

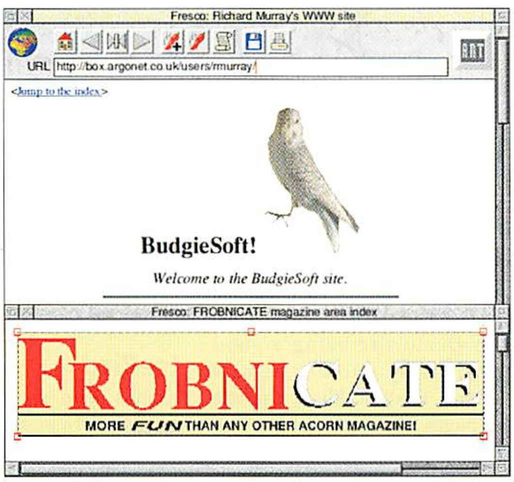
Call the Cumana team for further details and a copy of our 1997 Catalogue.
Tel: (01483) 503121 Fax: (01483) 451371 E-mail: sales@cumana.co.uk
www.cumana.demon.co.uk
The Cumana product range is also available through your local dealer
Cumana, Boundary House, The Pines,
Broad Street, Guildford, Surrey, GU3 3BH

comms

The world according to Rick

When I begin an article for this page, I am faced with a blank space that almost defies me to put some words into it. Much the same situation occurs when you open an Internet access account that gives you free Web pages. You have to decide how and what to say to the world with your own Web space.

While some people like to show off their skill with images, animations and clever features, others feel that content and information better convey their personalities. One such is Richard Murray, whose *BudgieSoft* Web pages hosted by Argonet are a good example of a site that contains more HTML than graphics.



Richard's pages describe some of the important things in his life – boeuf stroganoff, mature cheddar, more mature cheddar, bean pizza, music by MeatLoaf, TV and movies. His list of loves also includes his mom, who even has her own home page on the site. How many other sons have paid their mother's such a tribute?

In spite of his avowed dislike of mathematics, olives and physical work, Richard Murray has written lots of software for RISC OS, from his well-known BBS doors and utilities to a feature-laden Econet user editor and management system called *BudgieMgr*. The BudgieSoft name honours a fondly-remembered pet bird called Stephanie.

A demo version of BudgieMgr can be downloaded from the site, and details of other programs like his enhanced graphics ANSI terminal system, *Mterm*, can be found here.

The Econet enthusiasts page has useful information on the history, installation and management of Econet networks and shows that Rick really appreciates Econet technology.

Frobnicate is the anarchic digital Acorn magazine compiled and edited by Rick in his notional guise of Hissing Spinach Publishing.

Supplied in zipped *Ovation* format, the magazine has reached issue 12 with an estimated circulation of about 75, and is available both from bulletin boards and John Surcombe's Demon Web site at http://www.surcombe.demon.co.uk/frobnicate/

The blank space I started with is now filled with words, and Rick has also filled his space. Don't be put off by its high textual content and let this site give you an insight into the Web world of Richard Murray.

Richard Murray's BudgieSoft site
http://www.argonet.co.uk/users/rmurray

Showing your true colours

GIF images created for Web pages with RISC OS applications may display wonderfully on Acorn machines but can end up looking quite disappointing when viewed by PC browsers. *Netscape* can sometimes dither colours which were nice and solid in RISC OS to a rather nasty dotty texture.

It's all down to the palette of colours that the browser program uses to render the GIF images, and the RISC OS desktop's palette is not the same as the Netscape one, which can itself vary between platforms. One way of making your images look acceptable is by using a program such as *Photodesk* to design the images in full 24-bit depth, then convert the image mode to Indexed, using a NetScape palette file. For an image of the 216 colour *'Netscape Safe'* palette look at: http://www.lynda.com/hexh.html which shows the hex values of the colours too.

The other – and amazingly – free solution is to visit *GIF Wizard* on the Raspberry Hill Web site. You can enter the URL of a page on your Web site, and GIF Wizard will show various versions of your GIF images converted to different palettes and numbers of colours. Just save-to-disc whichever version you like from the browser window. For the best indication though, you might need to actually do this using Netscape – eek!

I sent the Arcade BBS logo GIF image made with *!Draw* and *!Paint* to GIF Wizard, and its best offer was 9 per cent smaller and virtually indistinguishable from the original GIF conversion as viewed by *Fresco*. More complex images would probably receive much larger size reductions. You can try it by going to http://www.raspberryhill.com/gifwizard.html and clicking on the Union Jack.

Contacting me

You can contact me, David Dade, at the usual *Acorn User* address and please keep sending me interesting URLs for the next yoUR List by e-mail to david@arcade.demon.co.uk, or mail #2 on Arcade BBS 0181-654 2212.

E-mail with Squirrel Solutions

NetMail is a new AUN-compatible e-mail package with advanced features allowing *Level 4* network users to send mail and attached files to other users. If a modem is available, NetMail can also link into the world-wide FidoNet BBS network. Its server and client applications are stored on the server machine, so no local hard disc is needed. NetMail costs £30 inc VAT and a demo version will be available from BBSs. Contact Glenn Richards at Squirrel Solutions for more information.

Squirrel Solutions
richards@arcticbb.demon.co.uk

E-mail pollution

The depths of Internet morality have been reached by one supplier of 'e-mail cloaking' software called *MaxxAnon*, which is claimed to send out thousands of anonymous e-mails on your behalf, protecting you from flames, disconnection and mailbombs. They waffle on about the right to free electronic commerce without hassle from netcops and 'postmaster deadbeats'.

If you'd like to express your appreciation of their software by e-mailing them the odd coredump, I'll pass on the address to you privately.

WebMasters need WebMaster™

Innovative Media Solutions have announced *WebMaster™*, their comprehensive Web site editor. By using a 'site file' to contain all the components, during editing the package automatically keeps all links up-to-date and maintains consistency between pages. Named colours are used with a DTP-style visual page layout editor and tool bar. Other features include an imagemap editor, modem speed preview and export of the whole site to your ISP with one click of the 'Publish' button. WebMaster™ will cost £99 + VAT or £89 + VAT with Clan membership discount.

IMS Ltd
Tel: (01934) 522880
sales@ims-bristol.co.uk

Demo special

There's enough demo news this month for a PD page demo special, and that's a great sign for the future of demos, games and computer graphics on the Acorn. Several of the key groups on the scene are putting in a lot of work to bring us new demos – with several interesting releases just around the corner. Demo parties are thriving as this interest picks up and, with Acorn themselves supporting events like Revelation 97, things are really taking off.

Demo scene beginners

For the complete beginner, here's an introduction to the demo scene. Demos can take many shapes and forms but are usually a combination of programming, graphics and music that produce a running demonstration on your computer. A bit like a short film on Channel 4, but with more of a special effects kind of feel.

What's the point? On the face of it, none. The authors make no money from them and the finished product does nothing useful. Yet demos remain a very popular part of the PD scene. For the coders it's an opportunity to show off their programming and design skills, and it's a real buzz to release demos and compete with other crews for fame.

Many people are content simply to collect and watch demos and marvel at the amazing feats of computer graphics they achieve. Most computer owners are interested in having some dazzling graphics with which to show off their computers – demos are the perfect tool for this.

How to get involved? Producing a demo takes time and practice. You need knowledge of programming (usually assembler), design, graphics and musical composition. For obvious reasons, the best demos are produced by teams or crews who have people with these skills. If this sounds too much of a challenge individually, you could always try joining an existing group, or just find out more about the existing scene.

The Internet is an ideal way to do this, with the Acorn Demo site being a good starting point. Run by one of the best coders on the scene, Frederic Elisei, the site hosts the home pages of several groups and has links to the most recent releases. More in-depth information and the essential demo charts can be found in the *Coders Revenge* disc mag (mentioned elsewhere on these pages). The chart shows the votes on the best demos, coders and musicians on the scene. The Acorn Demo site can be found at: http://sidonie.imag.fr/Acorn Demos/

To catch up on some of the past releases from the Acorn scene, you'll need to check out one of the large Internet software sites like the Stuttgart ftp server or a PD library. The Datafile has an impressive range, with some of my favourites like *FunkyDemo* and Armaxess's *RiscDream Megademo*.

The important thing is to get involved and help the scene to grow. A strong demo scene trains the coders who will be writing the commercial games of the future.

Coders Revenge

The second *Coders Revenge* disc magazine of '97 has just been released, with news of a complete re-design and re-launch for the next issue. It's short of many of the usual demo coding articles, but there's plenty of scene news as always. Coders Revenge is maintaining its place as *the* scene guide on the Acorn and with the promised continued development by editing group, Icebird, it should stay that way.

These guys are doing a lot to help the Acorn scene, so please help them out by writing articles and filling in vote sheets. It's interesting to see AU moving up the magazine charts to second place. All this scene news on the PD pages must be doing some good at last... Coders Revenge can be found in the direct download area of the Acorn Demo site on the Web.

IceBird

As has been mentioned in previous issues, well-known demo group the Archiologics have been disbanded, with several of the key members leaving to join Icebird. As well as the group's disc magazine, Coders Revenge, the group has a lot of software under development and full details can be found on the new Icebird demo pages.

Among the highlights are the group's second place *Reisnac* entry in the Siliconvention party which will be released very shortly and a demo orientated graphics package called *Icepaint*. The Icebird Web pages can be found at: http://www.germany.net/teilnehmer/100,160485/index.html

Siliconvention

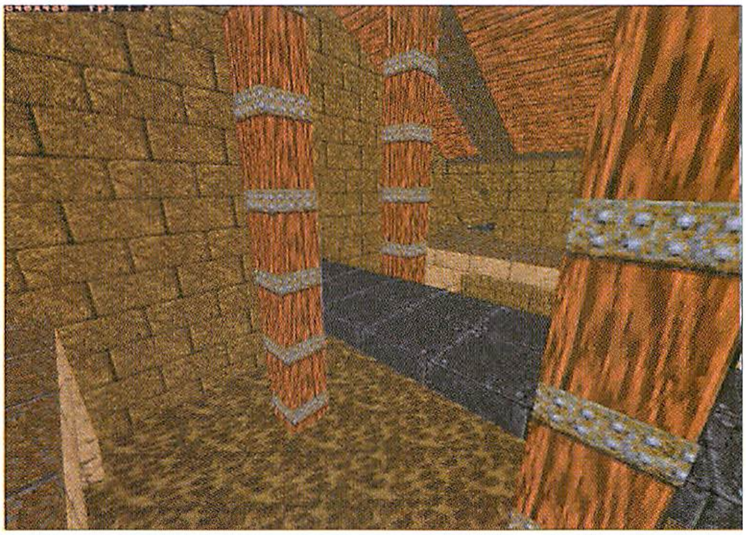
Early rumours on the Net suggest that *The Xperience* won the demo competition with Icebird's *Reisnac* demo in second place and Frank Foehl in third. The first and second place entries will be on public release very soon. Expect a full report next issue.

Quantum

The UK demo group Quantum are reforming with some new and old faces under a different name and will be releasing their first demo under this new guise at Revelation '97. As mentioned last month the *QTM* music player is still being developed and the group are looking to move into the field of 3D games as well as the usual demos. More news soon.

Party news

The next big event will be Revelation '97 taking place on July 5th at Welwyn Garden City (see ad). If you're at all interested in



A screenshot from the FQuake demo

computer graphics, come on down and enjoy the show. I'll be there helping out on both the *Acorn User* and Revelation stands. You don't have to be an expert to join in with the competition voting.

Following last year's Yelling Jam party, InterJam '97 is the main event of this autumn. Having merged with Intercon, this will be a big event taking place at Karlsruhe in Germany. Further information including the official party announcement will be in AU as soon as the details have been finalised.

Dignity

Long time PD column readers will remember a rather interesting 3D game from a few years back called *Magnetoids*. Written for ARM2 machines, it wasn't bad for its day, but author Frank Foehl has been hard at work on something altogether better. *Iron Dignity* is a running demo of Frank's new game, and it represents the first real release of a whole new level of computer graphics on Acorn machines.

Dignity runs a sequence of 3D animation that's been put together superbly. I normally find myself having to criticise jerky movement or bad design in these PD page demo reviews, but there's no way I can fault Dignity. The design of the 3D shapes is good, and the backgrounds and sky are perfect.

The demo flies you around an alien world, populated with mechanical walkers looking suspiciously like they've been stolen from the Empire, and space ships with quite a Babylon 5 feel. That's not to put down the designs, as they really look great!

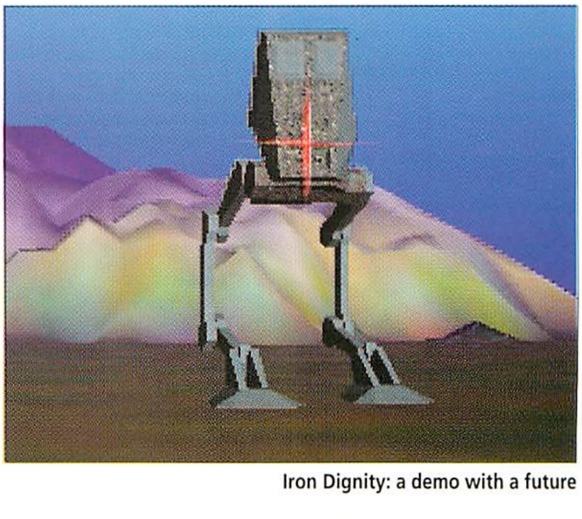
From a technical point of view, all the key features are here. Gourard shading, texture mapping, light sourcing and depth shading to fade shapes into the background are all present. The mountainous parts of the landscape appear to incorporate a lot of polygon detail and views to the distance show a good level of realism. One particular shot shows a lake in the distance that looks very real. Something hard to do without slowing down the frame rate unnecessarily.

There are also some well implemented lens flare effects – the first time it's been done properly on the Acorn. Lens flares are the dazzling pools of light you see on TV when someone points a camera at a light source like the sun. Although directors try to avoid this artificial effect, demo coders do their best to create it artificially – when done properly it looks fantastic. At several points in the demo, lens flare is used to great effect, either in a fairly reserved manner around the engine exhausts of a space ship or as dazzling laser fire.

The demo uses the 480 x 352 resolution which is a good compromise between the blocky mode 13 and the speed sapping VGA, and at 24-bit the shading is very smooth.

The only problem, if you can call it that, is that you need an impressive machine to run it. On my RPC700 it lumbers along at only two frames a second, so a StrongARM is necessary to get the proper demo speed. Many people will complain that so much attention is directed to something aimed at such a small range of StrongARM owners, but nothing of this quality could be done on previous machines. Computer graphics of this quality make SA an essential item for any RPC owner.

Frank is still developing the code which will become his next commercial game. Iron Dignity really is at Playstation level, and that's a great sign for the future of the Acorn scene. Dignity can be found on the Acorn Demo site on the Web and at Five Star PD library on disc D79 which is a three disc pack with *Fast Quake*.



Iron Dignity: a demo with a future

DFI

DFI have been hard at work on their entry for the Revelation demo party competition and some early screen shots look quite promising. The demo is likely to feature some reflective water effects and at least five sections. Competition should be hot for Acorn's Digital Camera prize. Interest in the party has been quite high all round so it should be a great day. Let's hope some UK groups can win back some glory from all the French and German demos seen in recent months.

FQuake

With 'proper' Acorn versions of *Quake* and *Doom* kicking around on the Net, Jan Vlietinck has produced a demo of his own Quake engine based entirely on his own code. It's optimised for the StrongARM on which it achieves an impressive frame rate at high resolution, but so far it doesn't include the lighting effects that give the original Id games their spooky atmosphere. Jan hopes to develop this demo of his engine into a complete game. *FQuake* is available from the Acorn Demo server.

Contacting me

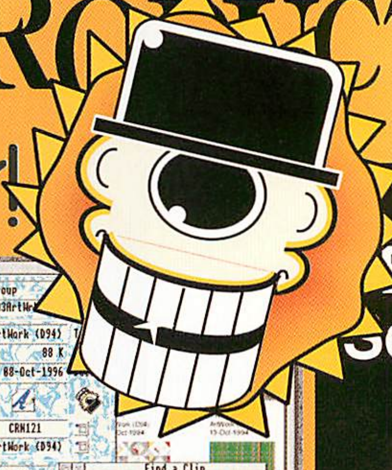
You can contact the PD page by writing to me, Paul Wheatley, at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield, SK10 4NP. Or preferably, by e-mail to aupdpage@idg.co.uk.

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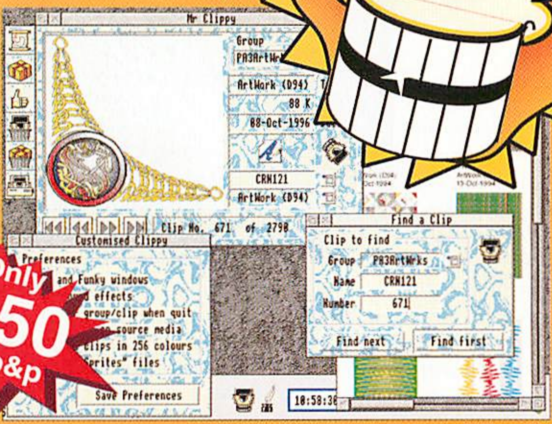
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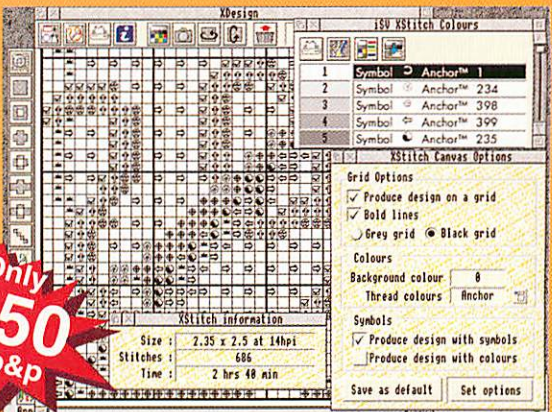
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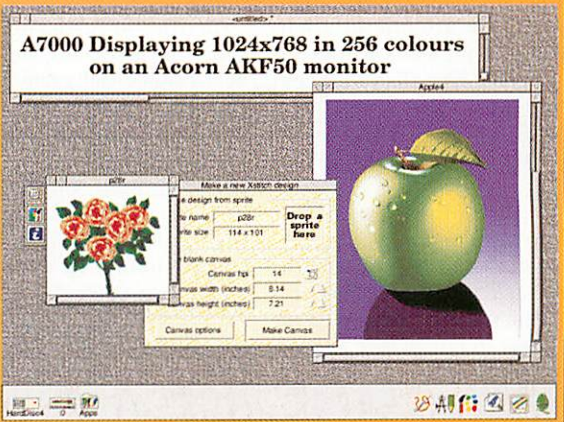
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business

Made-to-measure or off-the-peg?

Software can generally be divided into two distinct categories – bespoke or off-the-shelf. I would encourage business and other users to attempt to solve their computing problems via the latter, if possible. It will nearly always be cheaper – having specific software written can be very expensive. Development costs are among the highest in the production of new applications.

That being said it can also be very expensive trying to make a general-purpose package perform a task to which it is not suited or of which it is not capable – this is often expressed in the hours wasted in such effort. However, as with most things computing, there is a middle way – vertical software.

Vertical software is usually highly specialised and specific to either one task or a particular industry. You may remember I featured *Counter Care* from Counter Care Partnership some months ago – a system specifically for pharmacists dispensing over-the-counter medicines. Another producer of specialist software systems is Siren Software Systems who produce a number of vertical solutions – one of which is their *Neos* system.

Neos is a time and attendance system which can be tailored for individual clients who need a method of tracking the movements of workers and visitors to and from a site. The system, which was originally implemented on a Risc PC 700, brings many benefits including more accurate payroll, better record keeping, access control and site security. One of the greatest benefits is a real-time head count in the case of fire or emergency.

The project began as a piece of bespoke software for an international packaging manufacturer and is now available to other companies who require a similar solution. The software will need adapting to a specific need or site but is still better than starting from scratch and likely to be less expensive.

Interestingly one of the main reasons Andrew Pike of Siren used the Acorn platform, apart from its general excellence, was that RISC OS is not susceptible to the Millennium Bug – important for a solution which makes so much use of time and dates. The year 2000 presents no problems for Acorn users. This is a particular hobby horse of mine – shout the advantages of the Arc often and loud enough and someone, somewhere, will listen and realise there *is* a viable alternative.

On the technical side Neos can cope with 9,999 employees in 99 departments working 99 shifts. The internal calendar is however limited to the year 2247.

As with all good software Neos is modular in design and comprises nine main modules. The attendance is indicated by the swiping of a bar code and a voice response to the user. Bar codes have many advantages over magnetic stripe technology, particularly in industrial settings – hence their more widespread use. The swipe card also doubles as an ID card, further enhancing security.

Siren have also developed a low-cost digital photography pack called *Imagio*. This can be used to produce photographic images for inclusion on the bar code/security card.

Bar codes are highly reliable as are their readers. The bar code reader is connected to the Risc PC via the RS-232 serial post and the data is checked for errors by the software before being logged by other Neos modules. The use of the voice module gives a more user-friendly and wider range of responses than a flashing light or beep.

Siren have also produced a cut-down version of Neos called *Neos LITE* which provides an electronic registration system for security conscious schools and colleges. This has many of the best features of its big brother but without the !Overtime, !Rota and hours worked modules. Most similar schemes I have seen for schools and colleges have been very expensive both to set up and operate.

Contact Siren Software on: Tel/fax 0121-459 3333, e-mail sirensoft@argonet.co.uk or visit their Web site at http://www.siren.uk.com/siren/

● *Once again it is good to see innovative software and hardware solutions being implemented on the Acorn platform. If you are doing anything similarly innovative and wish to see it featured on this page let me know.*

New phone number

A number of readers have had difficulty making contact with ACP Ltd, the company who market *PlanING* and *ProjectING*. I am informed that it is easier to contact Paul Johnston of Meadow Computers on (01256) 892008 for details of these programs. As a special offer to readers of this page they are offering special prices of £39 + VAT for PlanING and £99 + VAT for ProjectING. These are non-StrongARM compatible programs.

Rumour mill

I have heard a strong rumour that talks are taking place between Apricote Studios, makers of *Prophet 3* and Raspsoft, makers of *!HardCash*. The aim is to make the file types compatible so that they can accept data from each other. This would certainly simplify the accounting/payroll side of any business.

Apricote Studios Tel: (01354) 680432
Raspsoft Tel: (01274) 671922

More accounting

Circle Software, the producers of *Impact* currently the only relational database for the Arc, have branched out with a new program. *Easy Money* offers full financial accounting facilities, suitable for the home or small business. It also provides everything from petty cash to profit and loss reports. Although I have not seen it yet I hope to be able to bring a full review in a future issue. The price is £58.75 including VAT.

Circle Software
Tel: (01208) 850790
E-mail: sales@circlesw.demon.co.uk

Good reads

Mark Twain said that the man who can read but does not has no advantage over the man who cannot read. In an attempt to give you back the advantage, I'd like to recommend a couple of good books particularly with the holiday season drawing near. The first is *The Cuckoo's Egg* by Clifford Stoll (Published by Pan at £6.99 ISBN 0-330-31742-3). It deals broadly with the subject of computer security and, despite a somewhat annoying American style, is an interesting tale of one man versus a hacker.

A somewhat weightier read is *Why Things Bite Back* by Edward Tenner (Published by Fourth Estate at £18.99 ISBN 1-85702-476-1). It deals with the down side to the introduction of new technology and its revenge effect. Computers are just one of many targets but the basic premise gives food for thought.

Contacting me

You can contact me, Mike Tomkinson, by post at the usual *Acorn User* address or by dropping me an e-mail at: *aubizniz@idg.co.uk*

Goings on at Psion

Acorn User presents its definitive guide to all that has taken place at Psion recently:

The Backlit 3c

Psion have at long last solved the age-old problem of being unable to use your computer in dim conditions with the release of a backlit version of the 3c. The backlight can be turned on and off as required using a new keyboard shortcut and will automatically turn off after a set period of time to conserve the battery. The backlit 3c costs £399 and is available now from all Psion dealers.

Psion and Java

Psion Software – the division of Psion responsible for developing and licensing their operating system – have taken out a licence to enable them to include Java support in their new EPOC32 operating system. The new 32-bit OS, due for release this year, is to be included in Psion's next generation organisers and could possibly be running on Digital's StrongARM chip. Psion decided to license Java for two reasons – to provide support for Java applets in their Web browser software and also, perhaps more importantly, to ensure there is a multiplatform development system included in EPOC32 of which Java is fast becoming one of the standards.

Mobile communications

Communication using the Psion 3a/3c and the Acorn PB II has just become substantially faster with the release of two new portable modem solutions – the PC card modem adaptor and the Travel Modem (available only for the 3c).

Three PC card modem adaptors are available; a 3c, a 3a/PBII and a desktop/laptop computer version.

Powered by two AA batteries, it offers up to 5.5 hours of use without affecting the Psion's battery. The adaptor allows the use of a range of standard type II PC modem cards including the Psion Dacom Gold Card and the Hayes Optima to name but just two. The 3c modem reaches speeds of 57,600bps while the 3a version clocks in at 19,200bps.

The travel modem is a pocket-sized fax and data modem which supports speeds of up to 14,400bps. It is available for the 3c only and is powered by either two AA batteries or by a mains adapter. Both modems are designed to complement the *PsiFax* and/or *PsiMail* Internet software packages.

The PC card modem is priced at £99.95 while the travel modem costs £199.95 – both should be available by the time you read this.

It's good to communicate...

The BT Mobility Solutions Group and Psion have announced that they are working together to market a new range of telecommunications services. The first service to be marketed is BT's proposed multimedia messaging service which will enable users of Psion organisers to send and receive faxes and e-mails as well as control the routing of their voice and fax calls.

The new service will incorporate BT's new Onenumber personal number service allowing automatic routing of voice calls according to the owner's diary for the day. The capability to store and forward faxes means users can control when and where they receive faxed information.

Financial results

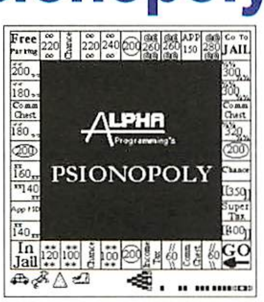
Psion had a very successful 1996 when they unveiled their financial results for the year. Turnover was up by 37 per cent to £124.18m and profit before tax was up by 38 per cent to £16.04m. The group have a gross profit margin of 41 per cent. Highlights of 1996 include the release of the 3c and Sienna and the re-organisation of the group into four divisionalised companies: Psion Computers, Psion Software, Psion Industrial and Psion Dacom. 1997 looks like being an even better year for Psion especially with the forthcoming release of their new 32 bit OS – EPOC32.

Psion PLC
Tel: 0171-262 5580
http://www.psion.com/

Proceed to psionopoly

As the name suggests, *Psionopoly* is a version of Monopoly for the Psion 3/Pocket Book II. Unlike the Psion version, it is not an official conversion and perhaps more importantly is freeware whereas the Psion version costs £29.95.

The game implements virtually all the rules of Monopoly and it is possible to configure various aspects of them, for example, whether property is auctioned off if another player doesn't want it and even the design of the board and playing pieces. Another feature which is in the board version but not in Psion's version, is that it is possible to cheat while playing the game – assuming of course that you can manage to get away with it...!



Psionopoly in action...

All in all great fun and as it is freeware should be considered virtually essential for any Psion/Pocket Book owner.

Psionopoly and various board designs are available for download from Alpha Programming's Web site at http://www.alphapro. demon .co.uk

Contacting me

You can contact the Portables page by writing to me, Mark Taylor at *Acorn User*, Media House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to auport@idg.co.uk

Psion 3c link

In the last column I stated that Acorn would be bringing out a new version of *PocketFS* to cope with the 3c/Sienna's new serial port. This does not now look like being the case, causing us Acorn users a few problems...

If you have a Risc PC you could buy the PC link and run it via the PC card but other Acorn users have no real solution to the problem at the moment. Hopefully, if Xemplar develop a Pocket Book III we might see a new version of PocketFS emerge – until then we can only wait and hope...

Ovation Pro RTF update

When I looked at *Ovation Pro*'s ability to import RTF files in a previous column I mentioned a rather annoying problem with the filter missing off the first word of every paragraph. This has now been solved and version 1.81 of the filter is available for download from Beebug's Web site. If you don't have Web access Beebug are including it in the next free update which should have been sent out to all registered users by the time you read this.

Beebug
Tel: (01727) 840303
http://www.beebug.com/

Acorn World 1997

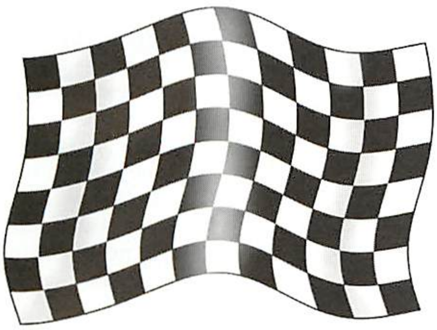
This year's Acorn World looks like being a very exciting one from a portable perspective as Acorn hope to release and have on sale their new portable – the Artisan. If the specifications and prices that have been suggested are anywhere near accurate we are in for a real portable treat!

Acorn World
http://box.argonet.co.uk/acorn-world/

Fantasy Formula One

Steven Hawkins

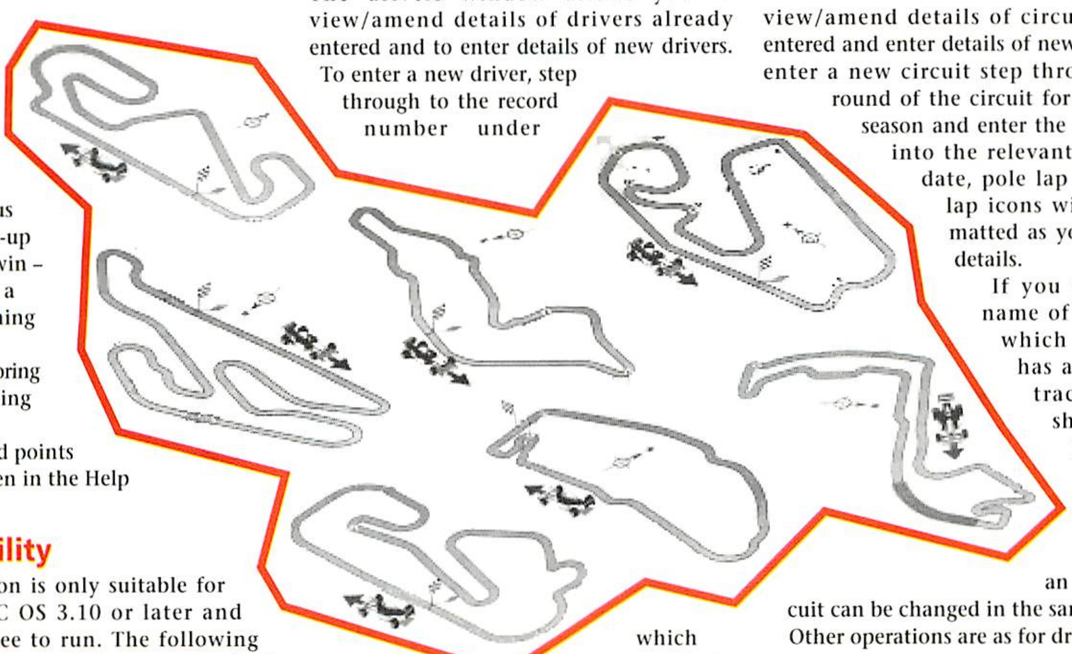




Based on the same rules and scoring system as the BBC *Top Gear* and *Grand Prix* magazines' Fantasy Formula One game. This program helps you keep track of the points scored by a number of fantasy teams throughout the F1 season. These could be teams you have entered for *Top Gear's* Fantasy F1 game or teams you and friends have picked for a competition between yourselves.

The name of the game is to win the world championship for your team by picking two drivers and two cars from those racing. You can put any drivers in any cars then score points throughout the season based on their performances. But, like the real thing, success is more a matter of skill and expertise than playing safe. You can't just pick the obvious big-money line-up and expect to win – every team has a chance of winning because of the sophisticated scoring and handicapping system.

The rules and points awards are given in the Help file.



Compatibility

This application is only suitable for use with RISC OS 3.10 or later and needs 180K free to run. The following Acorn Toolbox modules are required: Toolbox, Window, Menu, DCS, Iconbar, ProgInfo, FileInfo, SaveAs, PrintDbox, FontDbox and FontMenu.

Setup

Each year, at the beginning of the season, BBC *Top Gear* and *Grand Prix* magazines publish a list of drivers and cars, along with cost of each for the following season. These must be entered into the driver and car database along with details of the circuits that make up the Formula 1 season. You can then select teams from these drivers and cars.

After each race, enter the starting and finishing grid position of each driver in the main results window. As the results are entered the points scored by the drivers, cars and teams are automatically updated.

Clicking on the iconbar icon with Select opens up the main results window. From there you can access the Team, Circuit, Driver and Car detail windows using either the menu, a control key short cut or by clicking on the relevant icon within the main window. Using adjust to click on one of these icons will close the main results window after the chosen window has been opened. You can reopen the main window by using adjust to close the currently open window, or by clicking on the icon bar icon.

You can step forwards and backwards through the records in any of the widows using either the page up and page down keys or using the adjuster arrows.

Drivers

The drivers window allows you to view/amend details of drivers already entered and to enter details of new drivers. To enter a new driver, step through to the record number under which you wish to enter the driver details and indicate the cost in millions along with forename and surname. Details of a current driver can be changed in the same way. To confirm the information entered click on accept (if you use adjust the window will remain open) or press enter.

Cancel any changes being made to the current driver by clicking on Cancel, but once accepted, the changes cannot be undone. To delete details of a driver click on Delete. Note: all points scored by the driver will be lost so only those no longer used should be deleted.

The points and statistics will be updated automatically as details of the drivers' results are entered.

Cars

The cars window allows you to view/amend details of cars already entered and to enter details of new cars. To enter a new car, step through to the record number under which you wish to enter the car and provide the cost in millions along with chassis and engine make. Details of a current car can be changed in the same way.

Other operations are as for drivers.

Circuits

The circuits window allows you to view/amend details of circuits already entered and enter details of new circuits. To enter a new circuit step through to the round of the circuit for the current season and enter the information into the relevant icons. The date, pole lap and fastest lap icons will be reformatted as you enter the details.

If you supply the name of a track for which Fantasy F1 has a sprite, the track will be shown in the bottom right hand corner. Details of an existing circuit can be changed in the same way.

Other operations are as for drivers.

Teams

The teams window allows you to view/amend details of teams already set up and enter details of new teams. To enter a new team step through to the record number under which you wish to add the team and enter the team name, two drivers and two cars.

You can select the drivers and cars by entering their record number in the writable icons or using the pop-up menus.

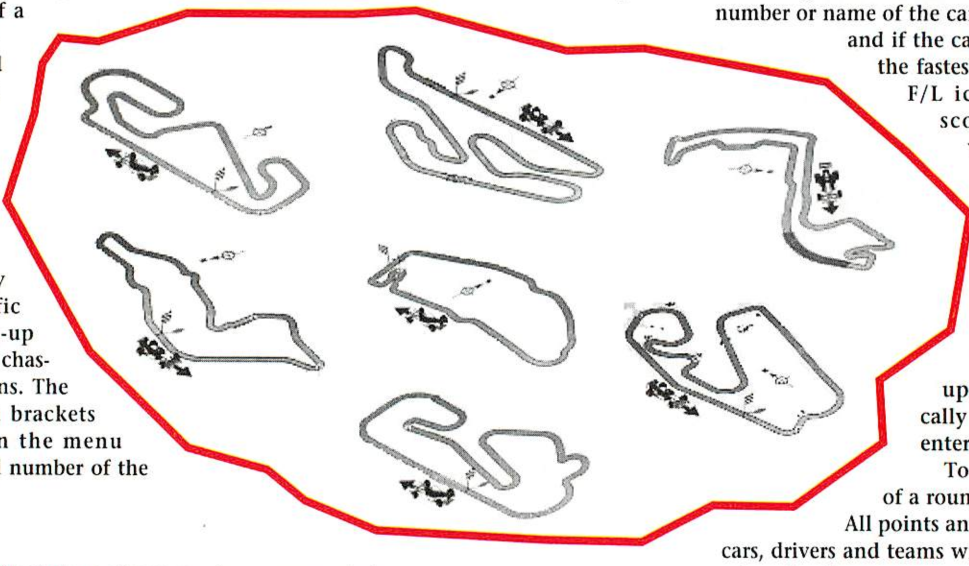
Details of a current team can be changed in the same way.

The total cost of the team must not be above or below the maximum and minimum budget set in the options.

To delete details of a car click on Delete.

The points and statistics for the team will be updated automatically as details of the drivers and cars results are entered.

You can display details of a specific car using the Pop-up menus next to the chassis and engine icons. The number shown in brackets after the items in the menu relate to the record number of the car.



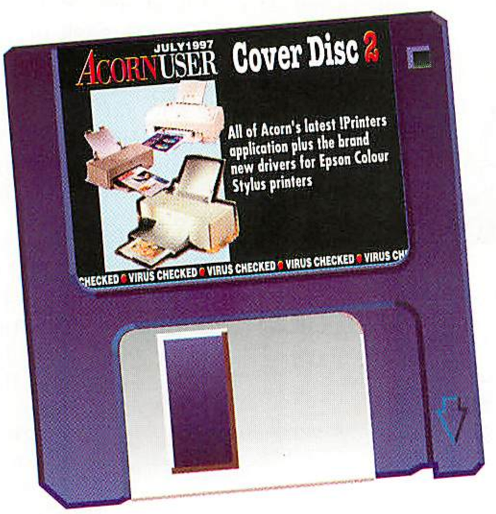
Results

The main Fantasy F1 window allows you to view, amend and add details of race results. First select the round in which you are interested, either by stepping through the rounds or using the pop-up menus next to the country and track icons. The results already entered for the selected round will be displayed in the results pane. Click in one of the icons within this pane and the text caret will appear. You can then use the cursor keys to move between the icons.

For each starting position on the grid enter the finishing position (if the car/driver starting from this position failed to finish leave blank), then in the next icon enter the driver record number or tab past this icon and enter the driver name (you only need to enter the first few characters of the name as the program will select the first matching driver from its list). Enter the number or name of the car in the same way and if the car/driver obtained the fastest lap click on the F/L icon. The points scored by the driver/car will be shown in the points column – the points and statistics for the car, driver and relevant teams will be updated automatically as the results are entered.

To delete the results of a round click on Delete. All points and statistics for the cars, drivers and teams will be recalculated automatically.

You can set the sort order that the results are displayed and entered in by clicking on the appropriate radio icon in the sort order box. Sort by Start, Finish, Driver Number, Car Number or Points scored.

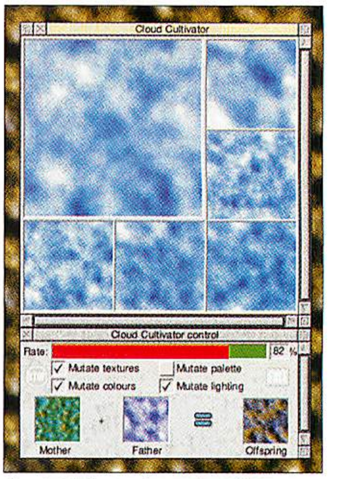


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Disc information

The software on these discs has been compressed using ArcFS 2 from VTi, and are opened by running a copy of ArcFS then double-clicking on the archive to open it. There is a copy of ArcFS on each disc.

Most software will run straight from the archive, but some programs may need to be copied out of the archive before being run, uncompressing them in the process. Any program that saves a file to disc, for instance, will be unable to do so into the archives on the disc.

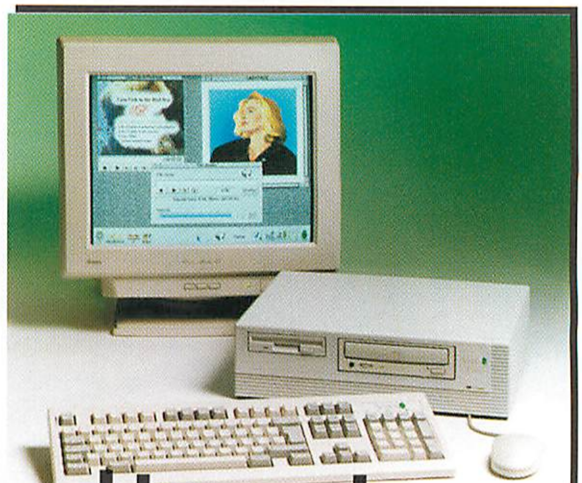
Faulty disc?

If your disc is faulty, test whether it will verify by clicking with Menu on the floppy drive icon and choosing Verify.

If it fails to verify or is physically damaged you should return it to TIB, TIB House, 11 Edward Street, Bradford, Yorkshire BD4 7BH. If it verifies successfully return it to the Acorn User editorial office at the usual address.

The Acorn User cover discs have been checked for viruses using Killer version 2.500 from Pineapple Software.

Using is believing



It's here, the new A7000+, but is it more than just a re-vamped A7000? **Jack Kreindler** finds out

Driving up to Cambridge early one Friday morning, one question kept springing to mind. Why were ART so eager to invite journalists to come and inspect the A7000 replacement? The A7000 was nothing to write home about from an enthusiast's point of view, so why invite an open critic of Acorn's lower end products, which trail far behind similarly priced PC's in the mips and megahertz stakes, to review the A7000+?

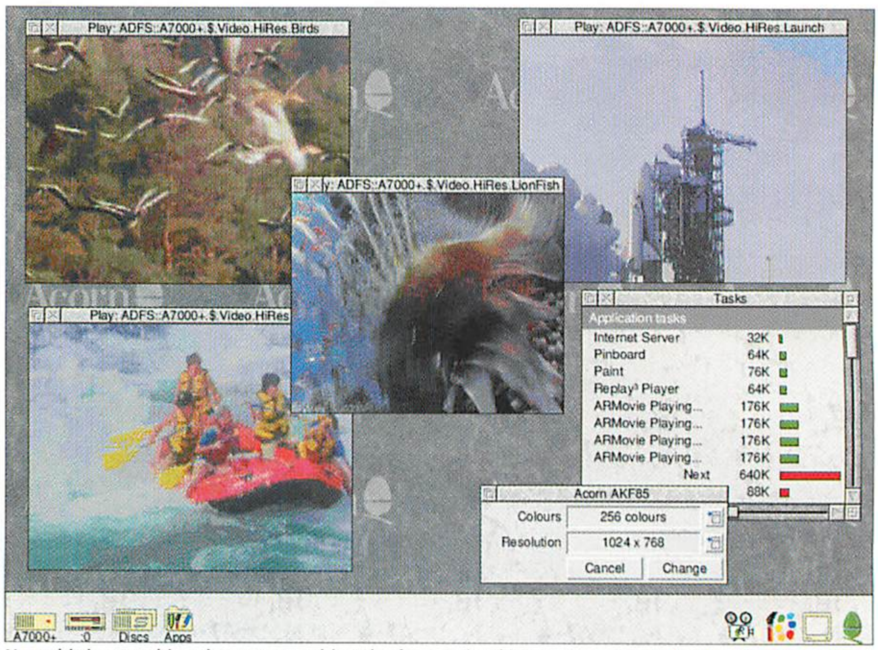
Chris Cox, clan chief and self-proclaimed performance freak, welcomed me with enthusiasm at Acorn HQ. I was introduced to the new machine and immediately began to realise why everyone was so enthusiastic. This was not just a revamped A7000 with go-faster stripes. This was a new computer.

A7000+ spec

It ought to have been badged, and indeed nearly was called, the A8000. Only the box, power supply and the floppy drive are carried over from its predecessor. The A7000+ is 'armed' with an A7500FE central processor clocked at a very reasonable 48MHz. The FE suffix indicates that the processor unit also houses an integrated floating point arithmetic chip able to compute much of the highly taxing mathematics that the main ARM core normally handles.

Floating point co-processors are now very much standard on Motorola and Intel chip for Macs and PCs. Over time, software houses have developed their applications to take advantage of floating point co-processors. Acorn programs, on the other hand, have evolved in the opposite direction; some have resorted to software 'emulators' to carry out floating point routines and other programs have forgone floating point for the less accurate integer maths routines.

The ins and outs of floating point and integer maths is not within the scope of this review but suffice to say that there exist only a handful of very specialised applications and public domain demos that can use floating point processors at all. The potential now exists for programmers to utilise the floating point co-processor, which was never there for the A7000 and is still not there on even the flagship 200MHz StrongARM Risc PC. But as with many of the new items on the A7000+, the floating point co-processor gives a strong indication of ART's direction for the next generation of Risc PC machines and RISC OS.



Now this is something the A7000 couldn't do; four replay files playing, albeit slowly, simultaneously

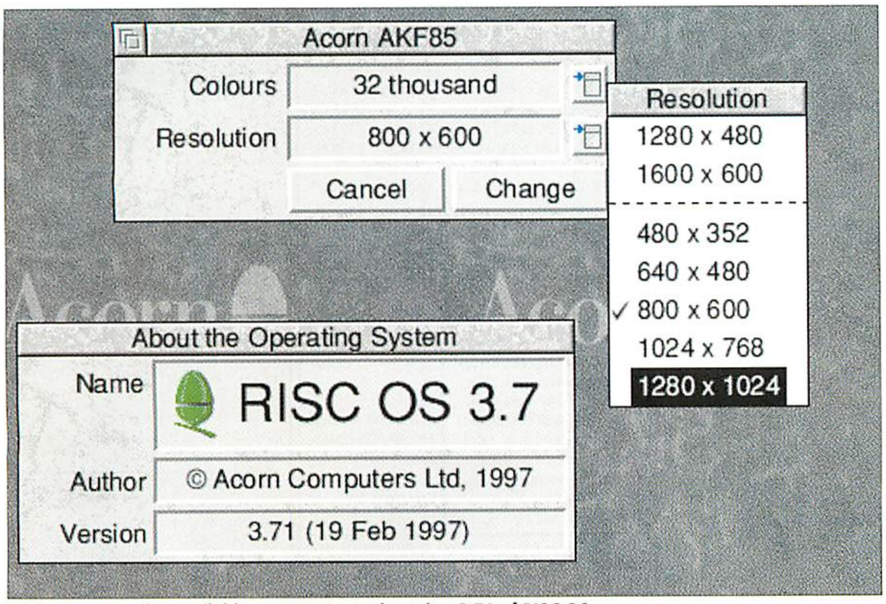
Hardware features

Other hardware features include an improved 32MHz data transfer rate for the main memory – twice as much as the current Risc PC. The bus also supports EDO RAM for faster 'flushing' and the motherboard can hold two SIMMs memory cards (128Mb maximum), one occupied as standard with an 8Mb SIMM. With the 48MHz internal clock and 32MHz EDO memory clock, the A7000+ is actually similar in performance to an A700 Risc PC with a 40MHz ARM710 central processor and 1Mb of VRAM.

This vast leap in performance, right into the heart of Risc PC territory, is one of the justifications for trimming the Risc PC range down to just the 200MHz StrongARM version. On booting up the A7000+, the results of the improved performance are clear to see. The operating system installed on the review machine read 3.7 on the plaque but was actually development version 3.71 with some implementation of significant new RISC OS technology like Nested Windows.

Even with numerous applications, networking and development operating system patches to load, the boot sequence concluded 30 seconds later generating a very Risc PC-like environment. The screen mode was 1024x768 in 256 colours – not possible without 1Mb of VRAM on a Risc PC and not possible at all on the A7000.

The RISC OS 3.7 style display manager



1Mb screen modes available on A7000+ and version 3.71 of RISC OS

offers such useful resolutions as 800x600 in 32,000 colours, 1024x768 in 256 and even 1280x1024 in 16. These modes can make good use of 17 inch monitors and cover a range of needs from multimedia and video to graphics and DTP. To complement the video support for multimedia, 16-bit stereo sound comes as standard and for just £100 extra you get an internal eight-speed CD-ROM drive delivering 1200K/second data transfer. Rounding off the impressive spec sheet is a huge 1.2Gb IDE hard disc, certainly big enough for most users' needs.

What has not changed from the last model is the case which still accepts only one expansion card or one 5.25 inch internal device like a CD-ROM drive. This space does not interfere with the optional networking card which plugs directly onto the motherboard. Something else that remains unchanged is the recommended retail price, which now represents very good value for money.

Performance

Specification is one thing, performance is another. Officially the A7000+ has a dhrystone rating of 2.1 equating to around 30 million instructions per second. This is the sort of power rating measured 'at the flywheel' does not mean an awful lot in the real world.

To gauge the power of the A7000+ 'on the road' a number of benchmark tests were used all in an 800x600, 32,000 colour screen mode. I also managed to perform some 'alternative' tests, perhaps a more useful estimate of speed for some users:

- The classic *ArtWorks* Apple redraw took just 10 seconds
- ArtWorks (not quick loading) and *Impression Publisher* took 18 and 6 seconds respectively, while the times for *Ovation Pro* and *Techwriter* were 15 and 3. Loading six less tools than on the A7000+ version, the old machine took a hefty 22 seconds to run ArtWorks
- To find one file among 4,500 took 32 seconds which compares to around five seconds on a Risc PC but is around 50 per cent faster than the A7000
- Bootup with full networking, backdrop, desktop manager application and development operating system; 30 seconds. Safe boot; 10 seconds
- The number of frames per second generated by the fabulous *Jan3D* demo were enough for smooth animation (nine per second for the skull in the foreground) though this did not utilise the extra power of the floating point co-processor, ideal for such 3D routines
- The molecular modelling package *RasMol* visualising a complex, 165K organic molecule comfortably rendered two frames per second with full specular lighting and spacefilling
- *Quicktime VR* loaded the Piccadilly AVI file in 15 seconds which panned and zoomed seamlessly once loaded.
- High Resolution Acorn *Replay* files with sound played smoothly with only one very brief skip every seven or so seconds
- The VRML file, Rose, took just three seconds to load into *VRML Eyes*, and could generate over 90 frames per minute in gouraud shading mode
- Fractal painter file, Shades, was fully rendered in 1 min 23 seconds
- *Paint* took two seconds to load an 800x600 JPEG file.

It is difficult to appreciate the speed from these numbers. The overall impression I was left with, after all the tests and using everyday applications, was that it ran faster than my old 8Mb ARM610 Risc PC by about 30 per cent and faster than my 4Mb A5000 by about 300 per cent. This is still way behind StrongARM especially in disc operations which is not much improved over the sluggish RISC OS 3.1 A7000. This is something of a disappointment but only in comparison to the great improvements in other areas.

Other highlights

Other software and operating system highlights were:

- Prototype Nested Windows
- A key software development for the future of RISC OS
- Gnome's X software with a Windows 3.11 front end – running all the usual PC apps without the need of a PC co-processor.

The performance would be more than adequate for spreadsheets and word-processing though heavy graphics usage would really need a PC card. It should be noted that the A7000+ has no need for its fan without a CD-ROM installed, making for near silent running if needed.

The now discontinued A7000 was a computer I would never have considered buying for my needs which are graphics and DTP. The A7000+ I wouldn't mind at all. For the school, home, business and those A5000 users with floating point processors who want a new machine but cannot justify the cost of a Risc PC, the A7000+ is the ideal machine with none of the StrongARM compatibility problems. It's small, quiet, powerful and pretty good value, introducing the future of ART's personal computer technology.

Product details

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All plain sailing

Ian Burley inspects the crew at Acorn

As a company Acorn are like a ship sailing into new seas. The captain and many of his officers are relatively new. Much of Acorn's old cargo has changed, though links with old ports of call haven't been entirely severed. In this first instalment of a two-part feature about key people at Acorn, we get to know the captain himself, David Lee and two of his bridge crew, Steve France and Chris Cox. We find out how they have contributed to the voyage so far and what lies ahead.



David Lee

We interviewed David Lee just a few days before Acorn's latest staff re-structuring — see the news pages for more details. When we spoke to Lee he was still plain and simply Acorn's managing director, having taken over from Sam Wauchope nearly two years ago. As part of Acorn's continuing progress of adapting to their newly-found international business environment, American-style management tags have been adopted, so David Lee is now referred to as president and CEO (chief executive officer). Both Steve France and Chris Cox are now VPs, or vice presidents.

The new labels sound very impressive, but one thing David Lee is firmly against is any unwarranted claim to fame. 'I have this pathological hatred of the cult of the personality,' Lee exclaims. 'I have consistently refused in the past to participate in any interviews which have been slanted in this way,' he added. The purpose of this feature is to extract a personal view of things, but despite the warning shot across our bows, Captain Lee was satisfied we weren't about to propose the inauguration of an appreciation society in his name.

We are not about to paint a picture of an impersonal man, however. David Lee has discovered a second life through his

All plain sailing

appointment at Acorn, admitting that while he thought his previous job was enjoyable at the time, in retrospect it could never compare with working at Acorn. Lee came from a solid senior management position at Olivetti UK. He was far from prepared for the hive of activity which was and remains the Acorn dockyards. Time has flashed by; we put it to him that in researching his history it had surprised us that his tenure at Acorn was fast approaching its second year: 'Not as much as it surprised me, I can tell you,' he remarked.

Acorn User first spoke with David Lee during the transition period in late July 1995 when the outgoing Sam Wauchope was still showing the new guy the ropes. Whichever way you want to look at it, Wauchope had been forced out of Acorn, but the hand over to Lee was very smooth. Wauchope even told Lee that if he needed anything, to not hesitate to phone him at home.

It transpired that Lee didn't need to dial that number, but was very grateful for the cordial way in which Wauchope passed on his job. 'We had some good laughs and he assured me he wished me every success and said – I'm expecting you to take good care of my share options!' The paths of the two men haven't crossed very frequently since then, but they did bump into each other at a function a few months ago. It seems Wauchope had held onto his shares, 'We had a little joke about that, he said – you're doing all right so far! I'm quite happy with the price!'

Lee admits he's very wary of the press after he was the subject of a distorted interview in the *Daily Mail*. When we first spoke to Lee and asked him for some first impressions at Acorn, he categorically refused on the grounds that it was far too early to dish out any initial impressions. Some 20 months on, we expected that he must have developed some impressions by now, 'Yes, in fact I had my first impressions very quickly,' came the unhesitating reply.

'I think the overwhelming impression that I had, and it did take me two or three months to recognise the importance of this, was this phenomenon which I now refer to, along with others, as "the Acorn community". Because this is something I had never experienced anywhere previously in my business life; I had been told about it by other people in my first days in Acorn, but frankly I didn't believe it.' Lee added that after three months he certainly did believe it and realised just what a huge strength it was. 'I found that absolutely astonishing. I simply did not perceive this network of dealers, distributors, software developers, etc. who almost had a religious belief in the Acorn platform.'

Having come from one of the biggest PC manufacturers in Europe, Lee was aware that some feared he was about to usher in a bland new era of Wintel conformity at the expense of Acorn's core independence and innovation. He recalled with some amusement that somebody had posted a message on the Internet referring to him as a 'bastard accountant.'

A defining moment for Lee happened in a bar late one evening at an education show when a group of developers presented Lee with a tee-shirt which featured a Microsoft logo on the front and the banner 'bastard accountant' on the back. But the shirt also displayed a graph of Acorn's predicted financial fortune under Lee's tenure. Lee treasures that particular souvenir and promises to wear it at an Acorn event one day, 'just to shock some people,'.

So what of the future? Under Lee, Acorn have been transformed from a tightly run, semi-autocratic, organisation which focused sharply on niche markets, like education. People within Acorn quickly convinced him that the company had valuable technologies which had not been given the opportunity to prove their commercial worth. At the same time Acorn had to change direction in order to survive. Those were critical times for Acorn – the shedding of jobs through severe restructuring, for example. However, fortune shined and Acorn were given their great break with the crucial Oracle deal.

Lee is quick to direct the credit for many of the positive changes made at Acorn to others. Lee reflects that before his arrival, decisions appeared to come from the top down at Acorn. 'I like to work the other way,' says Lee, who explained that someone had described his effect on Acorn as if he had popped the cork from a bottle of champagne which had been shaken around until the pressure had reached a

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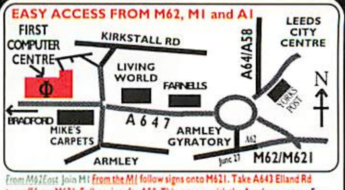
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critical point. 'I'm a great believer in delegation and giving people freedom and responsibility and I've tried to encourage that culture in the organisation, a culture of openness. If people think I'm talking out of the top of my head they should feel free to tell me. They have to be prepared to face me down in a logical argument, but I'm willing to have that argument."

Above all, Lee has been working to encourage Acorn employees to generate good ideas and enable those ideas to flourish. He admits he is no technologist, but sees an important role for himself in applying common sense to technical ideas from a business point of view. Technical brilliance isn't enough, tough – ideas good for Acorn have to have commercial purpose as well.

Chris Cox

A good example of this is the job of Chris Cox, VP of the product business unit. Chris Cox's job is a real challenge. His responsibility is to find markets for products among those who have been faithful to Acorn for many years or those new to Acorn who can find an advantage in using Acorn's proprietary platform. Pessimists regard these markets as inevitably withering into insignificance. Even David Lee described the market sector Cox is responsible for as "not having long-term strategic importance given the direction that Acorn are now taking."

However, Lee is giving Cox every opportunity to serve the loyal following, epitomised by the Acorn Clan. "Chris knew well the challenges that he was taking on. It was made quite clear to Chris, but perversely when you say something is not of long-term strategic importance it starts to do well, which it has," says Lee.

Cox is under no illusion. Although Acorn appear to have a bright enough future supplying RISC OS computers for the needs of Xemplar, the educational computing solutions joint venture company with Apple, the market for enthusiasts and other general Acorn platform users is indeed comparatively small. However, the Clan has grown steadily and there is still a steady stream of product being snapped up by the faithful, much to the surprise of many. "There have been several different things actually, one is the recognition now of how important the product business is to the technology side and vice versa. One of the key selling points Acorn has for its technology is that we actually know how to build products. So we're not just another design operation." This means Acorn demonstrate real products to prospective clients, not just raw prototypes or, worse still, ideas which remain on paper.

> **We actually know how to build products. So we're not just another design operation**

Another relatively new recruit coming from an arguably less glamorous part of the IT industry, marketing test and measurement equipment like oscilloscopes, Acorn made a big impact on Cox. "It certainly hit me – I was originally recruited to look after the enthusiasts market. These were my friends, you know – this was what it was all about!" Cox had owned a BBC Micro a long time ago, "to mess about with," but just like Lee, he was totally unprepared for the Acorn experience when he joined the company two and a half years ago.

As a Regan Files interview with Cox revealed, previous employment did have its moments – he was on an oil rig which spectacularly caught fire, for example, but his typical working environment comparatively mundane. "I come from an industrial marketing background where you have to shout and scream and leap up and down get anybody to even look at you. And you walk into this market and everybody is scrutinising what you are doing and drawing all sorts of conclusions and you think, whoa!, this is very different."

Barely a year had passed after Cox joined Acorn and the first major shake-up under David Lee happened. Cox reflects that while he was a survivor of the job cuts, he took a more practical comfort from them as it was clear that the changes were not for change's sake or to save a bit of money; these were major structural changes which would redefine Acorn as a company. Cox has an interesting time ahead and he has already managed to secure some exciting projects, like the commissioning of a new IOMD chip which is crucial to next-generation RISC OS computers, plus the launch of a new Acorn portable model, the core components of which were borne out of a technology development contract. Cox and his new assistant, Kerri Davies, are also planning to catch the attention of the considerable



number of loyal Acorn users out there who wouldn't necessarily think of themselves as 'enthusiasts.' So much for the 'dying market' cynics!

Steve France

While Chris Cox concentrates on products for more conventional Acorn markets, Steve France casts an eye over new vistas. Not to be confused with long-standing Acorn employee Alastair France – they're not related – Steve France is VP of marketing, a strategic marketing manager, at Acorn and is very much focused on Acorn's new generation of international customers looking to use Acorn's products or technologies in areas like networked multimedia and of course network computers. "What I'm about, as it were, is more forward looking business planning, I suppose you'd call it. In terms of what are the technologies we have, where are we going to be using those and what sort of technologies should we be looking at for developments in the future," explains France.

Interestingly, France reflects Acorn's relatively new emphasis on sourcing new staff from a pool of talent wider than the Cambridge locale. He comes from Loughborough and used to work for a company specialising in DSP (digital signal processing) technology and before that a well-known company best known for telecommunications products like network switching equipment. France is trained as an electronics design engineer but has now crossed the divide into marketing. However, his engineering background gives him a very handy insight from the engineering perspective when planning marketing strategy.

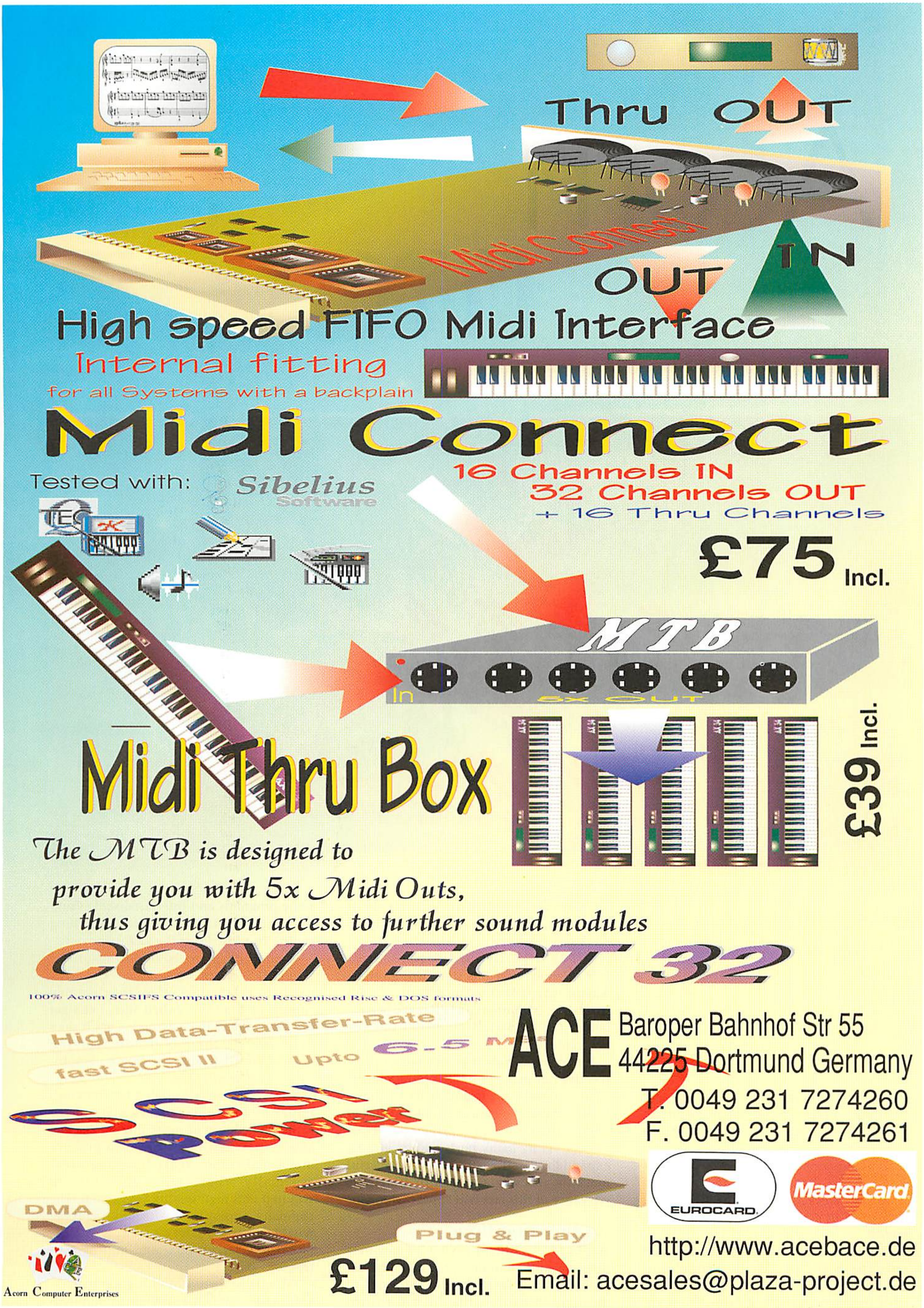
"I found when I first moved into marketing from engineering you get a lot of sceptical people, especially when you talk to engineers. The general engineering view of marketing people is smoke and mirrors merchants. I found by subtly letting them know that I have a good understanding of engineering issues and what it's all about, I can generally talk to people and we can have good conversations; it's not case of down at the Janet and John level – it's at a level where we can get things done." France feels it's important to him to view the technology from a user's perspective in order to have a feel for what the customer is looking for. "I have a Risc PC on my desk and I view the thing very much as a tool. I look at and I ask what benefit does it give to me rather than how it's doing that. I was very much a *how it does it* person when I was designing."

Like David Lee and Chris Cox, France was not aware of the Acorn community before he joined the company. However, unlike his colleagues he didn't find it a culture shock, though he concedes it was 'different'. He officially started at the beginning of January, but took a Risc PC home at Christmas to get to know the technology. Although he had been used to Windows from his previous jobs, it didn't take him long master RISC OS. While Cox comes across as an enthusiastic convert to the Acorn platform, France doesn't seem to have been bitten by the Acorn bug. His job is to examine the technologies available and persuade potential customers that it can meet their needs.

Compared to his time in the DSP industry, where there were a small number of players and the market was pretty well clear cut, France was at first taken aback by the sheer scale of the industry Acorn had jumped into. "There's so many more people involved in this and of course everybody has their own ideas on how to move forward and to begin with my difficulty was actually trying to build a framework upon which to hang it all." This successfully done, France was able to confidently identify what he calls 'the nub of it all.'

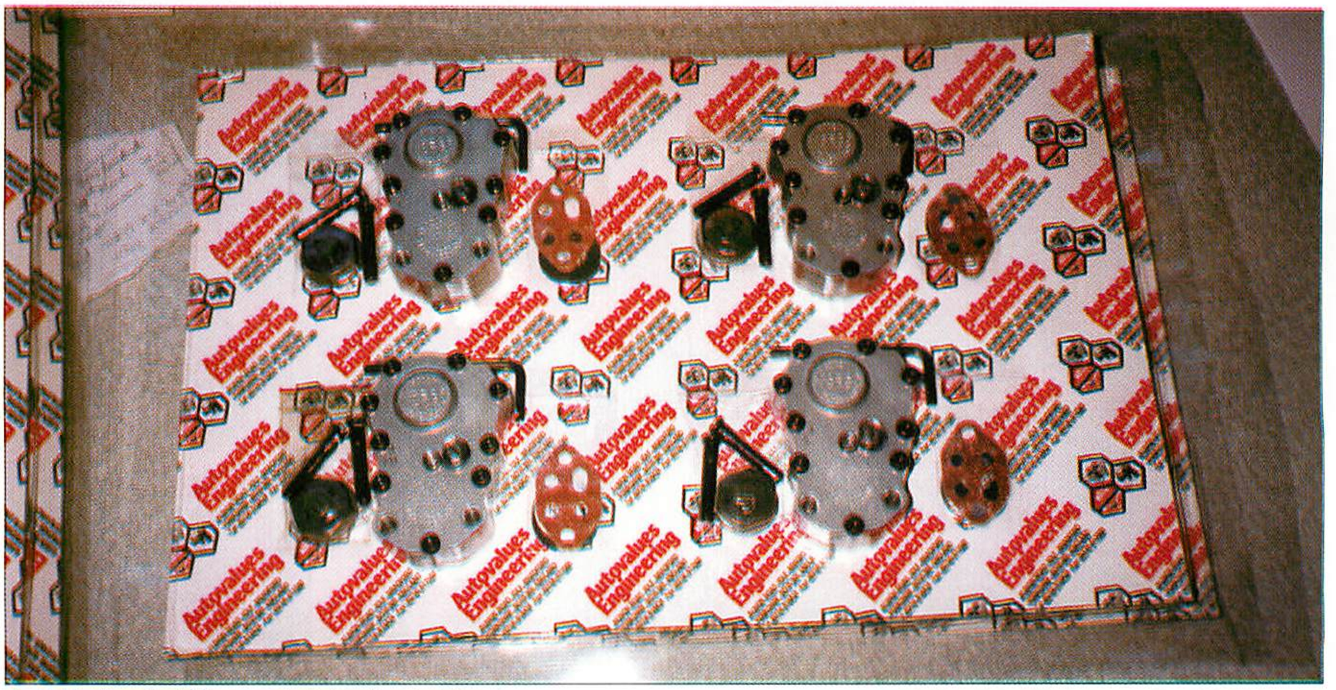
In his words, he has to extract the benefits from the features. As fabby as a Risc PC is, when a potential industrial customer is looking for, say, technology solution to a something like an information kiosk or a network computer, you'd be wasting their time persuading them that a Risc PC is the best thing since sliced bread. France says: "In the Acorn environment now we're talking to a wide range of large consumer electronics-type people. We're talking about things and in terms of trying to sell our technology it's important to be able to say to these people you need this – because... and the future trend of this technology is this... which gives you that..." It's all the more necessary because the technology is changing so fast, says France, it's very easy to get side tracked.

• *Next month we'll be talking to Peter Bondar, one of the chief architects of the new-look Acorn, plus we'll be exploring the relationship with Xemplar through the eyes of its managing director, Brendan O'Sullivan.*



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Acorn motors



The finished product. Oil pumps for Triumph motorbikes

Mike Tomkinson finds out how Autovalues Ltd use Acorn computers as an essential part of their business

I have been editing the Business Page and writing various articles about businesses and business-related software for *Acorn User* for well over a year. I hope in that time I have been able to convince at least some of you that Acorns and their software are viable and practical alternative computers in a range of business environments.

However, it is recognised that a valid criticism is the paucity of examples of good practice in the area of manufacturing – the production of goods rather than services. We all know that an Arc can hold its own in an office but what about a factory?

Redressing the balance

It is intended that this story will go some way to redress that balance. Perhaps a little history is appropriate before we begin – before the modern Archimedes was the venerable BBC B.

It may look crude from our modern perspective but many of today's programmers cut their teeth on it and it had, among many others, the enormous advantages of being able to accept a large number of devices via its many ports and its general expandability. It really was a wonderful machine and way ahead of its time. The relevance of this fact will appear later.

On the shop floor

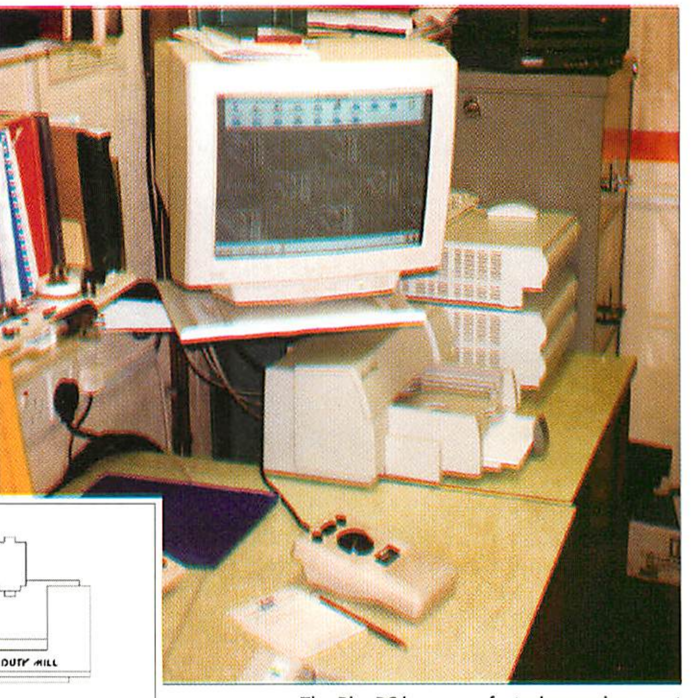
While researching a review of business software some months ago I met Graham Waterworth of RaspSoft who happened to mention, in passing, that he had written some programs and interfaced some Computer Numeric Control lathes and milling centres to a Risc PC at the factory he runs.

Would I be interested in having a look? Would I! So a few weeks later – Good Friday to be exact – I set off for the charming suburb of Bradford called Idle. Let's get the jokes out of the way now – yes it does exist and yes there is an Idle Working Mens Club. It is also the home of Autovalues Engineering Ltd.

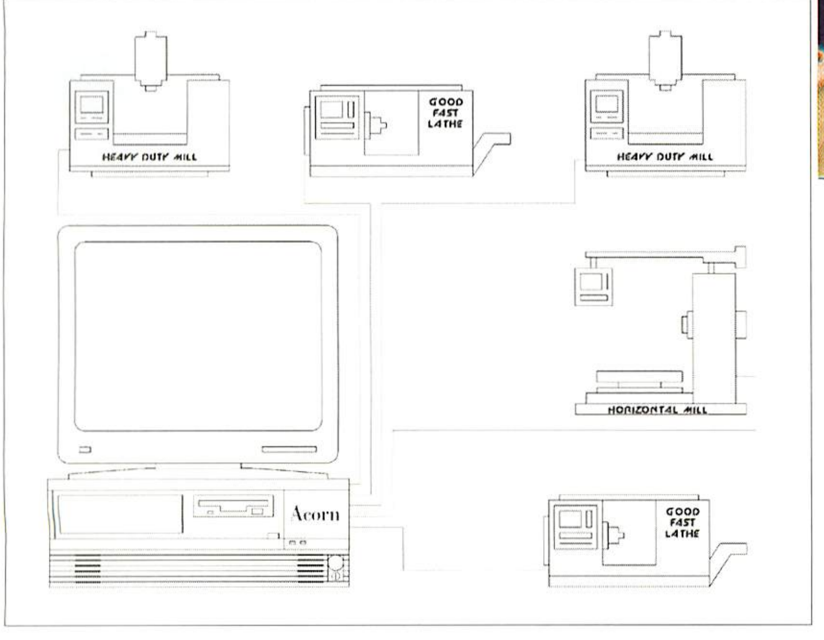
Autovalues were founded by Graham's father in 1964 and produce a very wide range of machined parts mainly for the automotive industry. They also produce machined components for other areas especially where large numbers are required and high quality is essential. The company employ approximately 15 people working on a variety of modern CNC lathes (see Jargon box) and milling centres.

Essentially there is nothing too remarkable about this – it is similar to hundreds

on



The Risc PC in a manufacturing environment



of other small to medium-sized engineering works. Those which survived the massive downsizing of the manufacturing base in the 1980s deserved to survive. They were very hard times for all UK manufacturing industry. In this particular case a combination of Yorkshire thrift and good management certainly helped keep Autovalues solvent.

Autovalues Triumph

Autovalues survived because, among other reasons, they established a good name in the production of oil pumps and cylinder conversion kits for motorbikes and Triumphs in particular. The trade name they established was Morgo and you can see the finished product in one of the accompanying photographs.

Triumph went out of business and then came back but they also managed to produce an awful lot of motorbikes in the meantime. The actual oil pump was designed using an Archimedes 440 with Oak PDT. This program allows the production of drawings to six decimal places and is the only design program for the Arc which is accurate to this necessary level for the production of a .DXF file capable of export into a CAM system (see Jargon box). This is the one area where Autovalues are forced to use a PC as the Arc has no viable CAM system.

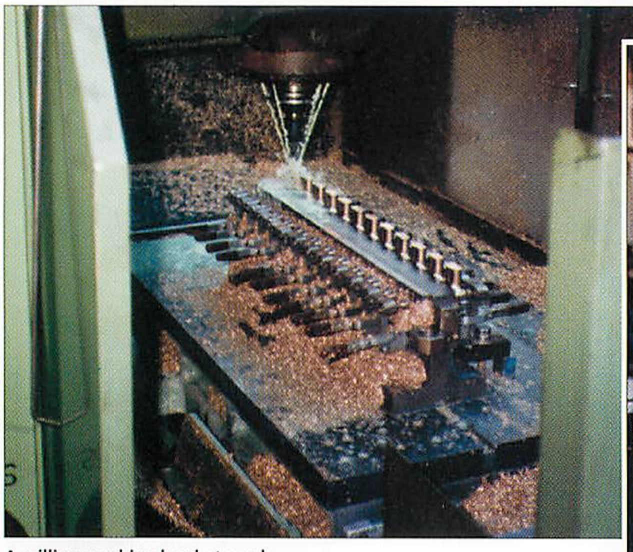
The thing I also found particularly interesting is the use of old imperial measurements in engineering. Millimetres have a place but so do the thousands of an inch. This is not only because Autovalues produce bits for older British motorbikes but also because they produce for the American market which is not metricated. The use of a sophisticated Co-ordinate Measuring Machine (CMM) sits alongside micrometers to give the desired level of accuracy in modern engineering whether in metric or imperial measurements. The worlds of BSF and BSW (see Jargon box) are alive and well and living in a suburb of Bradford.

Like all good systems Autovalues Direct Numeric Control system was born out of a need to solve a particular problem or problems. The CNC lathes have very little actual in-built storage capacity. Every time a program was developed for a particular task it needed to be uploaded to the CNC lathe or downloaded from it via an old, slow Epson portable computer. No nice big hard drives or convenient floppies and certainly no large amounts of RAM. A CNC lathe may be clever in what it does but they are not overly endowed in the memory department unless you are prepared to pay megabucks for proprietary memory boards.

The numeric control programs are actually not very sophisticated, they simply give instructions to the lathe or milling machine. They are a series of measurements giving the relative positions, to a datum point, of a cutting tool. However, they can be quite large programs and are therefore time consuming to develop and upload/download. They require storage because not only may they be required in future but also because the CNC lathe has little internal storage and the program may therefore need to be loaded in parts for a complex job. This is rather aptly called drip-feeding in engineering.

Graham realised there must be a better way and contacted specialist firms for quotes to purchase a solution. To say they were expensive is an understatement and so Graham set about using his BBC B experience to write his own solution.

Each lathe and milling machine has a RS232 or equivalent port and so it was a relatively easy job to network the engineering equipment to a Risc PC 700 and have that act as a fileserver for the



A milling machine hard at work



A CNC control panel

machines. This stores the programs and transmits them to the required machine on demand. Each program is stored as a number in its own dedicated directory for a particular machine. This is because usually each lathe or milling machine has particular strengths and weaknesses or subset of CNC commands. A program which would work on one machine might not necessarily work on another.

As many of you will not have experience of such programs I have included two small but useful utility programs on this month's cover disc. These would normally be distributed with the DNC Link and have been produced by Graham. The first is called *!PCD_Holes* which calculates evenly spaced holes on a given pitch circle diameter. The program is easy to use and self-explanatory although there is also a help file built-in. The second program is called *!Grooves* and produces actual numeric control code to drive a lathe to create various grooves. If you run it and save the output as a text file you can see an example of a numeric control output file. It also has a comprehensive built-in help file and some suggested dimensions. Both programs are also available on the RaspSoft Web site.

Of course the CNC lathe can also then save back to the Risc PC, hence Direct Numeric Control or DNC. The elegance of the solution lies in its essential simplicity although the hard work lay in the development of the system. Graham tackled the original problem in a modular fashion using one computer and one lathe. Having seen that it worked and worked well he then expanded the system.

The development of the system and the writing of the software was made easier by his earlier BBC B experience and the knowledge that if a PC could do it then so could a Risc PC. The programs all run in native Acorn mode – the computer is not even fitted with a PC card. At present the only limiting factor is the number of serial ports that can be fitted to a Risc PC – currently 24 or three times eight per backplane. If you had more lathes or milling centres you would need a second Risc PC.

The numeric control programs can be developed on any old Archimedes by the machine operators and also sent to the controlling Risc PC. Autovalues has an old A310 for this very purpose. Does it work? Well I have seen it and not only does it work but it works well and has saved Autovalues thousands of pounds.

In the office too

Acorns are not only used at Autovalues for CNC/DNC and product development drawings. They are also used in the offices for invoicing and stock control using *Prophet 3* and also for payroll using RaspSoft's *!HardCash* software.

Graham has set up a Web site and e-mail links which also save money by allowing very cost-effective advertising and cheap communication of the company product list, particularly to the USA and as far afield as New Zealand. It is much cheaper than using a fax machine and is good justification for the time and effort in setting up Web sites and using the Internet in a business context. It costs over £4 to send a A4 fax to New Zealand. It costs a local phone call to send an e-mail anywhere in the world.

In all Autovalues uses nine Acorns of various shapes and sizes ranging from the oldest A310 to the latest StrongARM equipped Risc PC. This is not a company which makes much use of PCs and would make even less use of them if it could.

Having now produced a fully working system Graham and his friend Sid Dine of RaspSoft Business Software have decided to make it more widely available by marketing it as a package called *DNC Link*. A basic system comprising software and a three port card to run three CNC machine tools will cost £499. Consultancy and cabling can be arranged via Raspsoft for those wishing to purchase a full installed system.

AU

Contacts details

Company:	RaspSoft Business
Address:	15 Market Street, Wibsey, Bradford, BD6 1LR
Tel:	(01274) 671922
E-mail:	raspsoft@argonet.co.uk
WWW:	http://www.argonet.co.uk /users/s.dine

Jargon box

CNC – Computer Numeric Control
The use of a dedicated computer to control lathes etc
DNC – Direct Numeric Control
The use of a general purpose computer to store machine programs for use on a CNC lathe
CAM – Computer Aided (Assisted) Manufacture or Machining
DXF – Document Exchange File
CMM – Co-ordinate Measuring Machine
A highly accurate measuring machine which uses a probe to take measurements
BSF/BSW – British Standard Fine and Whitworth
Imperial thread sizes

A3000 upgrades

Memory

1-4Mb	£68 (79.90)
(See also the "2nd user" section)	
2-4Mb upgrade pack	£45 (52.87)
4-8Mb	£135 (158.62)

The above upgrades are all constructed on four-layer boards, as recommended by Acorn. Gold plated connectors are used for reliable contact with the A3000 main board. There are no clips or wires, and no soldering is required (except 8Mb). Full instructions supplied. Some older types of 2Mb board cannot be upgraded to 4Mb, but we offer a trade-in allowance. Please phone for details.

Hard drives

A range of internal hard disc upgrades is available. The upgrades simply plug into the internal expansion slot. Also suitable for the A3010.

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420Mb	£169 (198.57)

RISC OS 3	£39 (45.82)
ARM3 (25MHz)	£119 (139.82)

(Dealer fitting recommended for the ARM3)

A3010 upgrades

Memory

1-4Mb	£75 (88.12)
1-2Mb	£35 (41.12)
2-4Mb	£59 (69.32)

The 4Mb upgrade is constructed on a compact four-layer board. No soldering is required. Full instructions supplied.

Hard drives

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RISC PC 16Mb SIMM £65 (76.37)

RISC PC

SIMMs...(please phone for latest prices)

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Dealer fitting for the 8Mb upgrade is recommended for the 25MHz A5000.

A3020/A4000

Memory

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420Mb	£115 (135.12)

A400/1

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Per Mb (up to 4Mb)	£30 (35.25)
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ARM3 (25MHz)	£119 (139.82)

Hard drives. For prices, refer to the A310 section.

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A310

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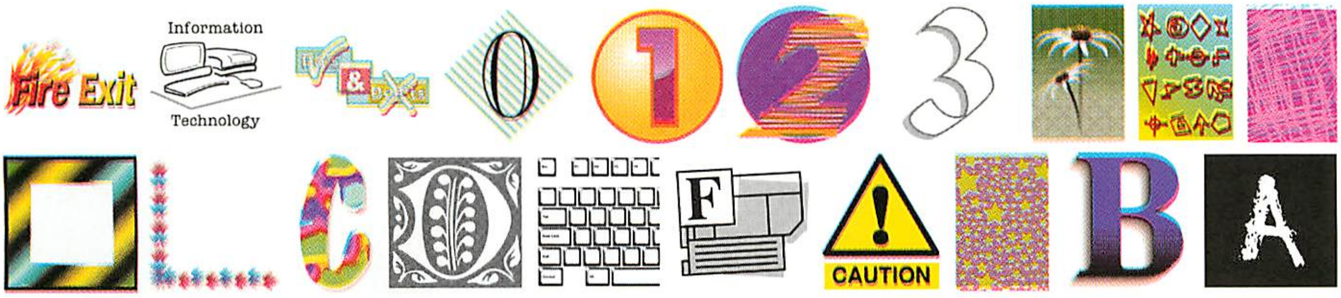
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VISA

Something for everyone



Jack Kreindler looks at the latest clipart collection from SmartDTP – with the help of Mr Clippy

PublishArt 3 is the third (surprise, surprise) of Smart DTPs clipart collections. It is not an image or illustration bank but a DTP resource featuring a massive 2,790 files for use in DTP, ranging from backgrounds to, well, almost everything the average DTP user would need.

All the graphics are in vector file format which makes them scaleable and smaller in most cases than the average uncompressed bitmap. Even so, the magnitude of storage space required for 2,790 *ArtWorks* files, plus the further 2,790 identical files in *Draw* format and a whole load of demos, fonts and extra utilities make the CD-ROM medium most appropriate. Fifteen high density compressed discs is the alternative arrangement which takes up 60Mb of hard disc for the clipart alone.

Despite the extensive content of the collection, two things are missing from the product which every good clipart package should have. This first is a browser and the second is a printed manual documenting all the graphics available. A solution is on offer, however, which aims to solve these two problems. His name is *Mr Clippy*, an easy-to-get-on-with, useful but somewhat bizarre character to have onboard your Acorn.

Mr Clippy is iSV's literally all-singing all-dancing clipart viewer as proclaimed in the song he sings on the animated start-up sequence "... I store clipart for you. I store vectors and bitmaps too, oooh." This aria together with quite the most ghastly textured window background ever seen on this platform can be disabled, thankfully. The misspellings of 'it's' as in,' Oh No, Its Mr Clippy' found on the box and in the manual, are not cured by any options.

Draw, Artworks, JPEG, GIF, TIFF, Clear, Hawk Digitiser, Time Step, Degas, RayShade, Windows Bitmaps, ProArtisan and Sprites can be used with Mr Clippy. The application creates squashed 250x250 thumbnails of any of the above filetypes and can output them as the original file, JPEG, Sprite or thumbnail.

The most powerful aspect of the viewer is the ability to display print previews of selected clipart groups. Scrolling through the pages is the quickest way of viewing the thumbnails with their file name and information beside them. The only complaints I have about this method are that there is no instant drag and drop facility from the print preview window and that the downsizing of the thumbnails to the preview size creates an inaccurate rendition of graduated fills – but perhaps this is picking at nits.

The print preview pages can obviously be printed which also solves the problem of the manual *in absentia*. But 2,790 graphics equates to 140 pages and takes a lot of time and ink on a colour bubblejet. What also takes time is the one-off generation of the Mr Clippy files from the 2,790 originals although it's nothing that a quick viewing of the Star Wars trilogy wouldn't resolve.

It must be remembered that Mr Clippy is not a Smart DTP product. It is sold by iSV but can be purchased with PublishArt 3 at a 25 per cent price reduction. The CD-ROM itself costs £40 and £5 for the upgrade from version 2. The package also comes with the complete iSV 277 font pack and a bundle of other utilities including over 220 *Impression* frame boarders, extra clipart and applications like *Colour Fun* and an electronic circuit designer. The value of these extras is estimated at £80.

So is the package good value? To consider this, the quality of the main clipart collection must be assessed. The graphics range from the very simple to quite complex, and some have been adapted from scanned-vectorised imagery. There is a great deal of mediocre artwork in the collection, and on either end of the scale, a number of very impressive and equally dreadful offerings.

The categories (backdrops, borders, bullets, corners, designs, drop capitals, headers and footers, highlights, margins, patterns, quickpaper, rules, stencils, surrounds and symbols) are well defined and all contain a large variety. Really, the main and suggested use for this kind of clipart is for manual alteration and customisation but as works of art in themselves they fall short of the mark. With so many files to judge I can only usefully make an overall conclusion that the artwork is worth the money but only in light of the extras, fonts and Mr Clippy offer.

Unlike some of the more expensive but superior clipart CD-ROMs available on Mac, PC, CorelDraw and PhotoCD formats, this package seems very insignificant. As an Acorn product it is one of the better collections and as were its predecessors PublishArt 3 will be the ideal resource for the home and educational markets.

Contact details

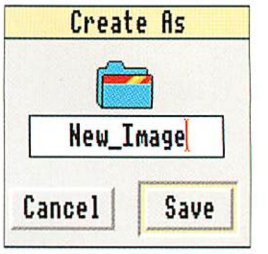
Company: SmartDTP
Address: 36 Park Road, Duffield, Belper, Derbyshire, DE56 4GR
Tel: (01332) 842803
Fax: (01332) 842803

Company: iSV Products
Address: 86 Turnberry, Home Farm, Bracknell, Berks, RG12 8ZH
Tel: (01344) 55769

TBAFS

Slimming down?

Jonathan Gutteridge looks at an alternative compression program from TBA





Ever wondered what you're going to do when all the space has gone from your hard disc? Buy a new one? Maybe delete some old files that aren't needed any more? Don't panic just yet. Although there are two commercial compression systems already available for RISC OS – *SparkFS* and *ArcFS* – *TBAFS* is being promoted for its ease of use for everyday users who want to make their hard disc last that bit longer.

Installation

Installation is a simple drag 'n drop job and after the program has been run for the first time, a copy protection routine kicks in to make it work on your machine *only*. This has its advantages and disadvantages. On the plus side this makes it a very secure system, it doesn't require the insertion of a key disc when run and it doesn't ask itself to be re-installed on updating the !System folder.

The downside is that if your machines aren't networked, you'll have a problem taking work elsewhere. Also the computer you're going to use must have a copy of !TBAFS as neither SparkFS or ArcFS support this filetype – as far as I'm aware there's no way of saving it as a normal archive. A decompressor is available free on the Web.

Compressing files

After loading, the icon will appear on the right hand side of the iconbar. Clicking select on the icon will make the configuration window appear. This includes options which will let you change settings such as the way in which files are to be compressed.

The three available are Squash, which compresses files to their maximum, TBA, which compresses files quickly and an option which will not compress the file at all. Other options let you change certain factors affecting the speed at which the file(s) are compressed.

Clicking Menu on the icon will lead you to the option for creating a new Image. An *image* is the equivalent of an archive and although it looks like a directory, it allows you to have any number of files inside and also compresses any files which are placed inside it.

File compression test

To check the speed and amount of compression this program can handle I have compressed a 158K *Draw* file and used both ArcFS and SparkFS as well as TBAFS. The table below shows the results.

Test results

Program	Time (secs)	Size in (K)
TBAFS	2.40	53K
SparkFS	3.02	21K
ArcFS	2.40	22K

As you can see, both TBAFS and ArcFS were about the same when it came to speed, but SparkFS came out on top in being able to reduce the file to a mere 21K. As many of the settings as possible were made the same to produce a fair comparison.

Unlike the other two programs TBAFS requires very little memory when decoding, which makes it ideal for handling large archives on low memory machines.

Protecting and fixing

Also included on the disc are two other programs, *TBAencode* and *TBAFSfix*. The first is for protecting files so, for example, to protect a drawfile, simply drag the file to the main window and enter a password. When you next try to load the drawfile an error will come up saying it's not a drawfile. This works reasonably well, although it could do with a few more features and options.

TBAFSfix is simply for fixing any TBAFS files which have gone wrong. I've been unable to test this feature properly as I haven't had any type of 'broken' disc but I dragged a file which was in working order to the icon just to see what happened. It resulted in about seven error messages appearing which contained what seemed like random numbers or letters.

Conclusion

Overall this seems to be a program that's heading in the right direction but is still quite a way off. I was particularly disappointed when I compressed a copy of ARCbbs, tried to run my BBS from it and got a message saying that certain files could not be found.

One group of people in particular who require hard disc space saved are those who run BBSs. Also, compared to SparkFS and ArcFS, the number of functions seems quite feeble. Maybe TBA could work on this for future releases. Personally I'd either use SparkFS or ArcFS or wait for a future release of TBAFS that's more developed.

Product details

Product:	TBAFS
Price:	£24.99
Address:	TBA Software, Mead Farm, North Road, Timsbury, Bath, BA3 1JH
Telephone:	(01761) 470003
Fax:	(01761) 479011
E-mail:	sales@tbalond.demon.co.uk

The show goes on



Saturday morning on the 17th May was dull and overcast but only outside; by midday over 1,000 people had arrived at the Thorne Park Sports Hall in Wakefield for the premiere Northern show. The afternoon quietened down — probably due to the Cup Final — but as this was being displayed on many stands it wasn't a good reason for staying away. Sunday provided a steadier flow of visitors and there were almost 3,000 people through the door. Here's a round-up of what they saw and heard.

Theatre presentations

The theatre programme was varied and on the whole well attended with the inevitable standing-room only situation at Peter Bondar and Chris Cox's talks. The adjacent bar area contained a couple of TVs for the overspill to watch the talks being given.

Chris Cox

Chris talked to a full house about new products. The main subjects were the A7000+ (see full review in this issue) and Risc PCs which will now ship with StrongARM and 1.2Gb HD as standard. He told us about clients who were paying Acorn to develop technology including a browser, RisCafe and eXtend. He also announced the re-launch of AcornSoft to brand Acorn software for promotion purposes.

The development of a better marketing strategy was explained. The NetStation will be used as a key tool and, as Chris pointed out, underneath all the hype it's RISC OS. This campaign is already beginning with a roadshow in shopping centres in south-east England. Acorn NetStations will be set up for people to get a hands-on feel for the Internet using an Acorn-branded machine.

Inevitably questions were asked about developments of floating point processing with the StrongARM which Chris explained would be ideally in-built on the chip, but this would be up to Digital. He also said that the core system for the Risc PC 2 was being worked on.

Peter Bondar

Peter Bondar's talks are guaranteed a good turn out and this was no exception. He told the crowd about the internal re-organisation at Acorn (see News section) and that recruitment is on-going for more engineers. They plan to employ 15 graduates this summer and there was also mention of a student development plan.

He talked of the contracts with Korea and Japan and of a new one with a company in Taiwan – there is also an office planned in California. He went on to say that we can expect to see the new logo concept Acorn@heart over the next few months.

Galileo – the new operating system was brought up, he said that this would have a *hardware neutral approach*. He further developed the idea of AcornSoft saying that this may well be used as a marketing vehicle for other software houses as well.

Peter explained that the release of the new portable is dependent on the original client. On been questioned about software development, he admitted that he was personally responsible for the software tools being [expletive deleted] but that was in another time when budgets were limited and hard choices had to be made. Perhaps things will be different now.

Answering questions he commented that the Risc PC2 will have a new case which he expects will provoke an interesting reaction and as for floating point, all he would say was that Acorn had a *cunning plan* — we can only hope that they kill Baldrick first.

Acorn on show

Acorn's stand was busy right through but this comes as no surprise as there was rather a lot to see. The new A7000+ was unveiled with its speed enhancements, floating point facility, EDO RAM support and built-in on-line help. The StrongARM Risc PC was on display too.

The prototype of the new Acorn portable was covered by a Do Not Touch sign for most of the show. *Acorn User* received an exclusive preview and we can reveal that the keyboard included a revolutionary replacement for the mouse – nicknamed the *pencil eraser* by Acorn staff – a tiny gadget located in the centre of the keyboard which gives finger-tip control of the mouse pointer. The full colour screen was excellent quality.

The NC was demonstrated running Acorn software – a turnaround Acorn policy but a step in the right direction for all Acorn software developers. Also being shown was the eXtend client/server technology.

Staff were also on hand to demonstrate the modification to the window system – allowing users to fix the window as a pane in another window – which will be particularly useful for running Java applets in browser windows.

Two-day tour

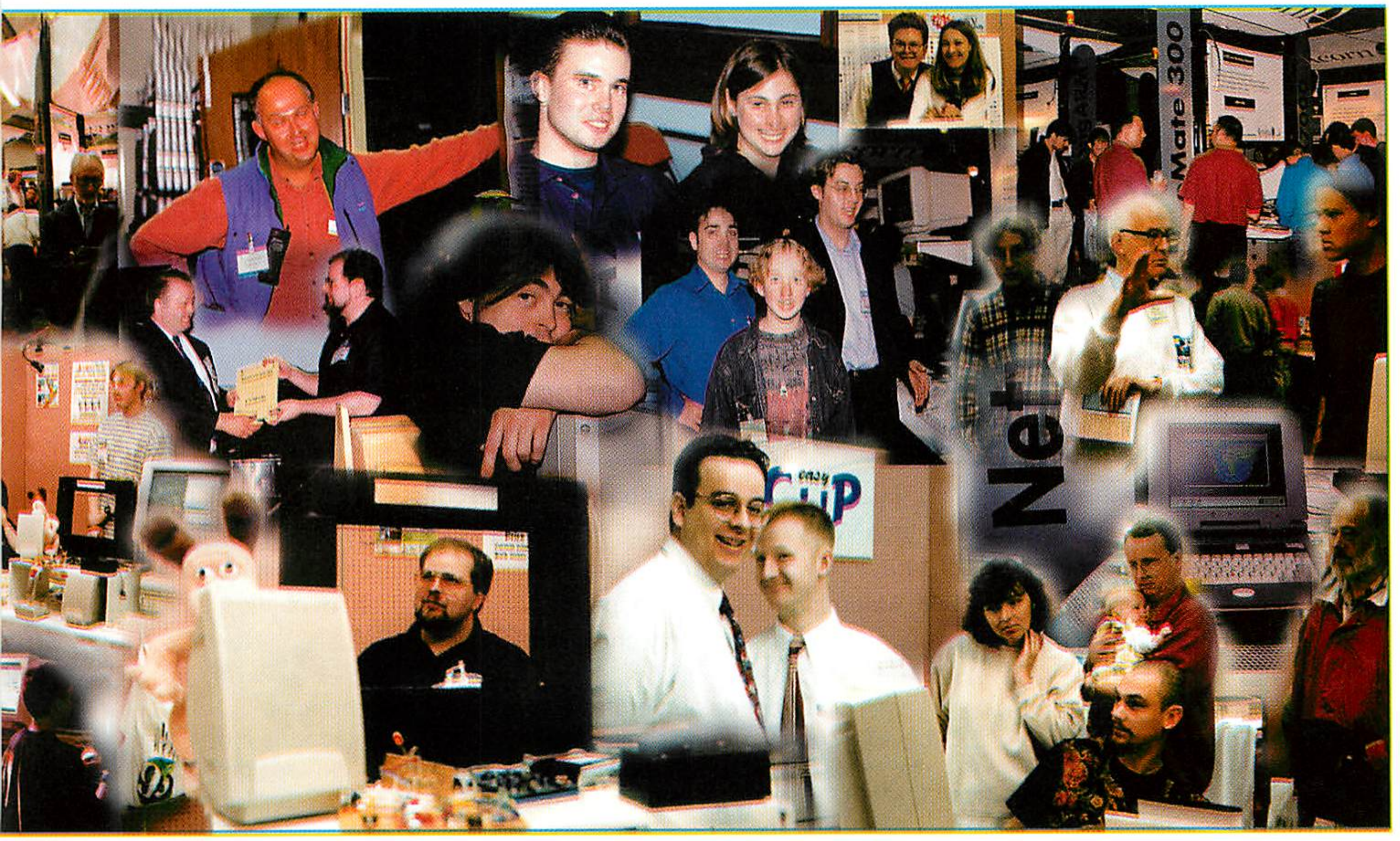
It could easily take the full two days to tour round the exhibition — the low cost of stand space at this show guaranteed just about everyone was represented. The Argo stand certainly could not be ignored – sales of Zip drives and modems were good and it was amusing to see Andrew Foyle of Argo Interactive wandering round with a mallet busy repairing parts of his stand while muttering *It's your kneecaps or a zip drive.*

If digital cameras were what you were after, Spacetech, Irlam and Acorn were on hand to demonstrate. It took until Sunday afternoon for me to get to the front of Spacetech's stand which was surrounded for the full two days by visitors interested in the cameras, the new version of *TopModel* (reviewed next month) and *Photodesk 2.*

Drifter from The Fourth Dimension could be played at various places around the show and was going down well. The darkened TBA arcade was the place to see the first public showing of *Break Horse Power (BHP)*, but after much hype it looked a little disappointing. Werewolf debuted *Shuggy* at the show – see Gameshow for more details – and Destiny Software were showing the latest developments to their game *Eternal Destiny.*

Stuart Tyrrell told us that his company STD are currently developing RISC OS interfaces for Playstation and Nintendo 64 gamepads.

Acorn World '97 show representatives were on hand to explain the new travel packages they were offering to make a cheaper day of it when visiting the exhibition in November, if travelling from



outside the South-East.

Arthur from CSH and Clares' new *WimpBasic* as well as all their other stock were selling well. SmartDTP had almost sold out of *PublishArt 3* – no wonder James Parry always has that grin on his face. And iSV's *Mr Clippy* was in evidence on many a T-shirt.

If Web site creation and maintenance is your thing, Dalriada had their first public demonstration of *WebSpider* and IMS were showing *WebMaster* – look out for the comparative review in the September issue of *Acorn User*. On the RComp stand was the latest version of *HTMLEdit3*.

Gareth Owen, in his new job at Logotron, was busy promoting their software including *Music Studio 32*.

Jon Duddington's *!Speak* could be heard reading text – although I didn't hear a Yorkshire accent – maybe that's on the cards ready for next year's show..

Apart from the Wakefield Group, The ARM Club and the Derbyshire Acorn Risc Group represented the user groups encouraging any Acorn enthusiasts to join their ranks and meet up throughout the year.

Warm Silence Software launched *FPEPC*, a software package to utilise the floating point coprocessor present on DX PC cards from the RISC OS side.

Fabis had *Recycler* on sale for the first time – expect a review soon. RaspSoft were demonstrating the new payroll package *HardCash*, and Sherston were showing off all their latest releases. SoftEase were doing well with the latest version of *TextEase*, despite the team having a few too many on Friday night.

Prize draw

Saturday:
First prize – Casio QV10a with Acorn software – Richard Hartley, Burnley, Lancs
Second prize – 6 month subscription to Argonet – D E Kilgariff, Lincoln
Third prize – ArtWorks – Mr D Hill, Ilkeston, Derbyshire
Sunday:
First – Casio QV10a with Acorn software – J Evans, Wakefield
Second – 6 month subscription to ArgoNet – G Grey, Hightown
Third – Ovation Pro – Alan Mays, Sheffield
Others:
Personal Accounts – John Tytgat, Belgium, Mark McLean, Merseyside, Mrs Therwick, Bucks
WimpBasic – Peter Dickinson, Wakefield
Textures (RComp) – Ken Patterson, Leeds

Web site competition

Best Commercial Web site was won by the Acorn Cybervillage, http://www.cybervillage.co.uk/

Best Enthusiast Web site was won by the Acorn Computer User WWW Group – Poppyfields, http://www.poppyfields.oaktree.co.uk/

Here's to next year

Many companies are finding exhibitions such as BETT simply too expensive to attend. Shows like Wakefield are less expensive and they have a good chance of financially breaking even – these seem to be the way forward, so support any shows in your area – the South-East show in Welwyn Garden City is on July 5.

The Charity stand which was jointly sponsored by the WACG and Norwich Computer Services raised almost £1,800. Proceeds will be split between charities in Yorkshire and Norwich. Sales of StrongARM labels made £130. Thank you to those who supported this worthwhile cause.

Chris Hughes from WACG commented that, 'the success of the show is down to the hard work and dedication of the committee and members of the Wakefield Computer Group and of course to the wholehearted support of the Acorn community. We have already had five exhibitors asking to book for next year. Our new venue has proved a success for everyone allowing a greater number of both small and larger Acorn companies to be represented at the show.'

I think everyone who exhibited or visited the exhibition will agree that the show was a great success and hopes that WACG will arrange another next year. And of course I can't finish without mentioning Brian Eves – the Town Crier – who spent the two days making announcements around the show at the top of his voice – what do you do the rest of the year?

AU

Nstore 5

The popular National Curriculum planning, record keeping and reporting package has just been completely upgraded. *Nstore* is now multitasking and mode independent, using 'drag and drop' file transfer and RISC OS printer drivers.

Other enhancements over version 4 include automatic printing of targets in reports and the facility to import CSV files of pupil names, gender, dates of birth and attendance. The basic version of *Nstore 5* provides all of the original features including automatic report writing.

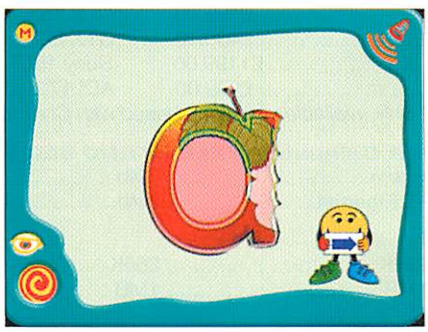
It's on two discs and costs £44.95. It stores data for six classes of 36 pupils and 144 'topics'. Extra discs, which can each store three classes are also available. The hard disc version, which stores up to 36 classes and over 1,200 topics costs £69.95, including a site licence. Existing users can buy a complete upgrade including manual, for £14.95 (basic version) or £29.95 (hard disc version). Full information about Nstore, and a free demonstration copy are available now from their Web site.

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Freepost, Swansea, SA2 9ZZ
Tel: (01792) 204519
Fax: (01792) 298283
Web: http://www.argonet.co.uk/h.s.soft

Yet more from Sherston

Sherston are currently producing so much software I could almost write a Sherston Page each month!

Their first new program is an update of their popular *Talking Animated Alphabet* which appears on CD-ROM and now features sound, music and morphing animations. Aimed at Key Stage 1, the program helps children to learn lower case letters and their phonic sounds in three graded activities.





In the *abc-CD* each letter of the alphabet has a corresponding illustration that starts with the same letter and has been carefully designed to look like the shape of the letter. (The monkey, for example, is holding his arms in the shape of a letter 'm'.) Children can watch the letters 'morph' into their corresponding images while listening to the letter's sound. This provides them with a strong visual and aural link that helps them remember the shapes and sounds of the alphabet.

The Talking Animated Alphabet on CD-ROM costs £29.95 + VAT.

Nursery Rhyme Time is a triple format (Acorn, PC, Mac) CD-ROM containing a delightful selection of nursery rhymes to either watch and listen to, or join in. The nursery rhymes are carefully read out, each word highlighted as it's read, with background music and a clever animation to watch.

Nursery Rhyme Time on CD-ROM costs £40 + VAT.

Finally, Sherston have put all 18 *Stage 3 Talking Stories* for the Oxford Reading Tree onto a CD-ROM. The triple format disc cost £65 + VAT and includes six stories from Stage 3, Stage 3A and Stage 3 Wrens.

Sherston Software
Tel: (01666) 840433
Fax: (01666) 840048



Hickory, dickory, dock,
The mouse ran up the clock.

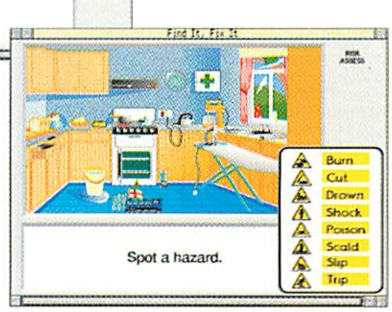
Safety in the home

4Mation are another company who feature regularly in these pages because they continue to produce high-quality material which is frequently tackled in a completely new and refreshing way.



Designed and written by 4Mation and sponsored by Domestos and RoSPA, *Find it, Fix it* is an interactive program designed to make youngsters (and adults) aware of some of the hazards around the home.

The program opens by offering a choice of either kitchen or bathroom and then the user may either search for hazards or fix them (hence the title). Each time the user clicks on a suspect object, a menu pops up asking what injury the hazard is likely to cause. The program responds to the input by either proclaiming the answer to be correct or offering help if the answer is wrong.



As with all of 4Mation's software, the artwork by Don Slaven is superb. Some of the hazards are not easy to spot in either of the two rooms, but if you click on something suspicious, that area is magnified so that the object can be clearly seen.

Some worksheets are supplied with the pack plus a chart detailing some domestic accident statistics. I was astonished to learn that each year 70 people drown in their baths and there are almost 300,000 cuts in the home requiring hospital treatment. Although Find it, Fix it is aimed at children, I think adults might be advised to take a long hard look at this program.

Find it, Fix it costs £24.50 + VAT (single user) and £49 + VAT (site licence), plus £2 P&P.

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Tel: (01271) 25353
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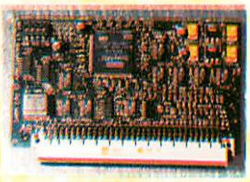
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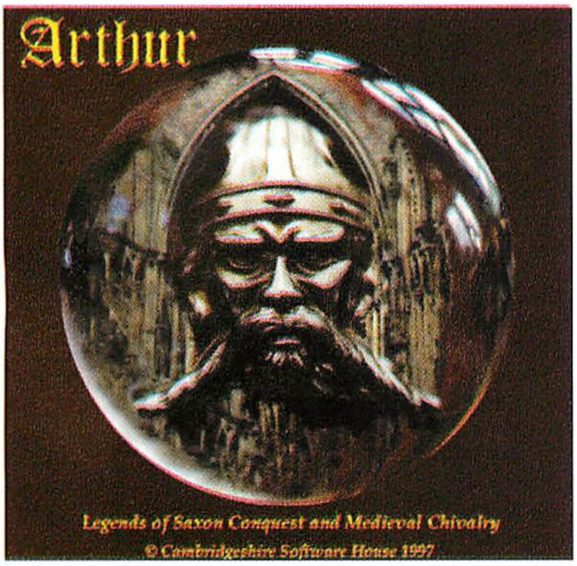
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The return of Arthur

No, not a return to a pre-RISC OS operating system, but a CD-ROM about King Arthur and the legends, characters and locations surrounding him. Geoff Preston investigates



Another classic from CSH – Arthur: Legends of Saxon Conquest and Medieval Chivalry

Entitled *Arthur: Legends of Saxon Conquest and Medieval Chivalry*, this is the latest (large) program from CSH and follows the same format as their previous award winning CD-ROM, *The World of Robert Burns*.

Arthur differs from all other multimedia CD-ROMs (apart from *Robert Burns*) in that it will not work until instructions in the form of a text file have been entered into it. Once the program icon has installed itself on the icon bar, a 'Quest' must be dragged onto it. The Quest is in fact an encrypted text file which determines the opening screen, the locations you visit and the clues required to solve a problem or problems. Each Quest presents the user with a series of new challenges and takes him/her on a journey through Arthur's kingdom meeting all manner of colourful characters in medieval settings.

Each Quest contains a number of multiple choice questions which require you to search out the answers. Once you've been through some of the 17 supplied Quests, you can easily produce more yourself using at text editor such as *Edit* and the 'blank Quest' provided.

The artwork is a combination of vector graphics, movie clips and photographs taken either from the air or at ground level. Every map, picture and story may be saved for use in a word processed document. There's a short biography for each of the main characters and a glossary of terms to help with some of the language.

The subject matter is unusual to say the least and although King Arthur doesn't feature very prominently in the National Curriculum Orders, the material contained in this program will prove to be valuable in the study of medieval history. One useful feature is the timeline which helps put events in the correct order.

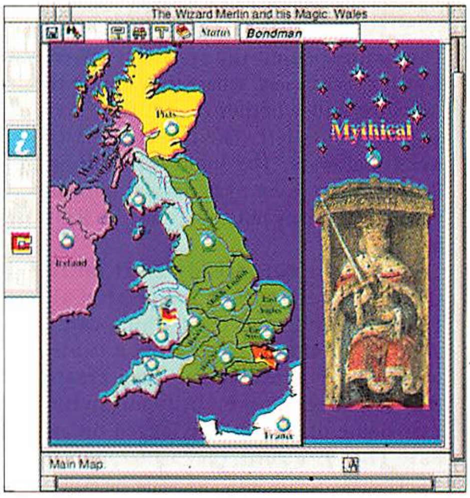


Scattered around the map are a number of hot spots which you must visit to solve the questions – the glossary of terms is very useful at times

This is another classic from CSH. When I reviewed Robert Burns, I said that it would inevitably win some awards (which it did.) Arthur: Legends of Saxon Conquest and Medieval Chivalry is even better than Robert Burns and I'm quite sure will be receiving more than one accolade. I also said that I expected other software houses to develop software that uses a file to launch it and which would provide exercises for students to work through. To my knowledge, nobody has, which is a pity because this is a very clever way of providing differentiated material for students to investigate a topic.



At any point users can click on the information icon on the main screen to get additional information about the currently selected area. The information is divided into categories (General, Legends, People etc) which needs to be read carefully in order to solve the questions. The text can be saved out of the program, as can the pictures, maps and movies



The full map is carefully drawn and contains lots of detail

Product details

Product:	Arthur: Legends of Saxon Conquest and Medieval Chivalry
Price:	£49.95 + VAT
Supplier:	Cambridgeshire Software House
Address:	PO Box 163, Huntingdon, Cambridgeshire, PE17 3UR
Tel:	(01487) 741223
Fax:	(01487) 741213
E-mail:	cshsoft@compuserve.com
WWW:	http://ourworld.compuserve.com/homepages/cshsoft

Less waste

Allan Keeley shows how a program can be developed from a need



At the end of every week I end up with a mountain of waste paper which pupils have printed on a whim, maybe because they've nothing else to do at the time or, perhaps to see their work in its present state. Annoyingly, much of the work is never collected and, worst of all, when the pupils are asked why they have printed they don't know. The cost in paper, ink and toner was becoming excessive.

Paper saving solution

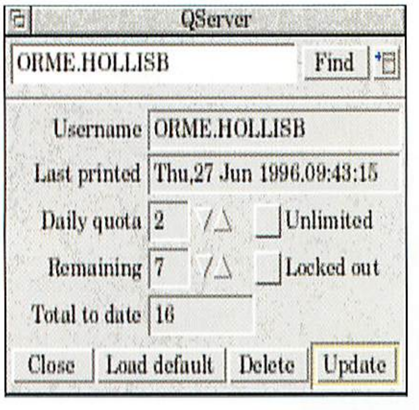
After consultation with Darrell Taylor at Room 20 Software we developed a plan. I had already tried a paper saving solution that was featured in *Acorn User* but found that this was not suitable for my network as it was written specifically for another, which was set up in a particular way.

I was looking for something that would provide feedback to the users telling them what was happening and giving them some indication of what they could and could not do. This element of interactivity was crucial, but equally important was keeping the job of the network manager to a minimum. A method had to be devised which would by-pass the need for a duplicate user list having to be entered onto whatever program was written.

Making the connection

As we use *NetGain* on our network we have to use a modified !Scrap called !NetScrap. This means that all users who want to printout have to be logged onto the network. On recognising this (I teach IT so I'm not always very quick on the uptake) we realised that we'd got them! Even if a network does not have the same restrictions as mine – i.e. users have to be logged on to print out – *Quota* from Room 20 Software will still work because it forces users to log on to print. All that was required was a means of tying the ability to print out with the fact that they were logged on together.

Quota fulfils all of my needs. It consists of three applications: Quota itself which



resides on the printer server and does the donkey work of marshalling the printouts into the correct place, *Client*, which is placed inside *Printers* and provides the users with an ecologically friendly tree icon next to the printer icon. A number underneath the tree tells users how many printouts they have left for that day and when they have used them all, the leaves fall off. If they try to print again an error message reminds them that they cannot and should try again tomorrow.

Monitoring printouts

The brains behind the system is *QServer* which checks users, where they are on the network and whether or not they have any printouts left. The clever bit is the users' database. The logic is as follows. Because users have to be logged onto the network to print out they must be legitimate users.

If they do not already exist on the QServer database they are created and given a default user level which can be adjusted by the manager from a control window. Once users have been created they can be searched for by typing in their user name or, if they are logged on and have *Printers* loaded, they will appear on the QServer menu and can then be edited, for example, given extra printouts.

The effectiveness of the system is further enhanced by its management interface. These include unlimited printouts, this is useful for staff as well as trusted pupils who use the system and require access to more than the default amount of printouts. Users can be locked out, this is a good deterrent for persistent offenders, once they have been identified, as it forces them to get confirmation from a member of staff before they can print out. This is useful if you have, as I do, a user called Clipart which allows pupils to a directory structure full of 'clipart'.

Many younger pupils would print out enormous pictures of Mickey Mouse for no other reason than it looked nice on the screen. If a pupil does legitimately require extra printouts these can be given to that pupil instantly via QServer and the amended quota will appear underneath their tree.

Change the default quota

A running total of the users amount of printouts is displayed so extravagant users can be identified. Also because the users database is self-generating it is not a problem if you've set the default quota of printouts too high or low as the manager can delete the database, set new defaults and leave it to get on with it. The users on the network will only know if they happen to glance at their tree and see the number underneath change.

After two terms, the amount of waste paper generated has fallen dramatically. We still get the odd wastage but this is within the bounds of acceptability.

Product details

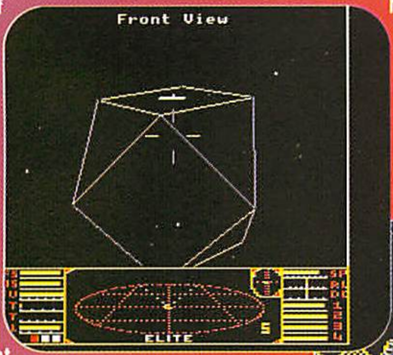
Product:	Quota
Price:	£49.99
Supplier:	Room 20 Software
Address:	49, Henry Street, Grassmoor, Chesterfield, Derbys S42 5AT
E-mail:	sales@rmtwenty.demon.co.uk

GAME SHOW

Purpose: to play Elite

Graham Nelson reviews the BBC Micro emulator from Warm Silence

In the May issue of *Acorn User* I reviewed Warm Silence Software's *Z80Em*, an emulator for the Sinclair Spectrum. This month it's the turn of *6502Em* which revives an earlier generation of Acorns: the BBC Micro Model B, BBC Master, Compact and Acorn Electron – anything except the original Atom.



You might think that Acorn would at least tacitly encourage this, but no: they have an inflexibly petty attitude to distributing their old ROM-based operating systems. The BBC Micro ROM images can only be distributed as part of Acorn's own emulator *65Host*. (The best that can be said for 65Host is that it's free.) Warm Silence thus have to supply both 6502Em and 65Host, along with a rather silly program to copy the ROM images from one to the other. Worse, the BBC Master versions can't be distributed at all, so unless you have a real BBC Master you can't emulate one either.

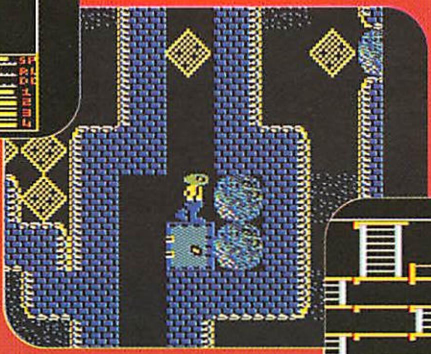
This minor nuisance is really the only negative point to make about 6502Em, which is remarkably good, fast and robust. The 'Info' window describes its purpose as 'to play *Elite*', and they're not kidding. Elite was a *tour de force* of BBC Micro programming, squeezing an amazing amount out of the hardware, so it makes a good test case.

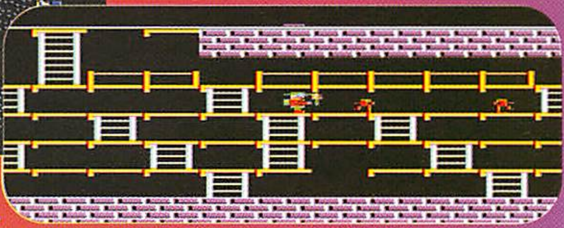
Emulating the hardware

Elite's display is in two screen modes at once – that is, the top two-thirds use one mode and the bottom third another. This requires exquisitely good timing, with the game altering the screen mode exactly as the monitor's electron beam passes through the two-thirds level of the picture. Anyone who's ever tried this, using the interrupt timer on the 6845 chip, may remember that being approximately right is easy – but then the tide mark between the two modes looks choppy, sliding up or down by a few pixel rows as the computation load varies. Not so under 6502Em – the Elite split screen is sharp to the pixel.

Elite sounds good, too, with an authentic mix of peals, white noise and rising tones. The emulator appears to have no trouble imitating 'envelopes', that is, instructions to the BBC sound effects hardware. An extravaganza like *Ghouls* raises the hair on the back of my neck not because it sounds like a haunted house, but because it sounds so much like a BBC Micro, raised from the silicon grave.

Mode 7 teletext graphics were no problem and sideways scrolling – in which the game landscape scrolls smoothly left to right or vice versa – is also in good working order. I found *Rocket Raid* a little jumpy, but it probably was on the BBC Micro, too; *Planetoid* was fine. All in all, the only hardware features not emulated are those which can't sensibly be used: the Tube, the serial interface ULA, the shift lock LED and so on.

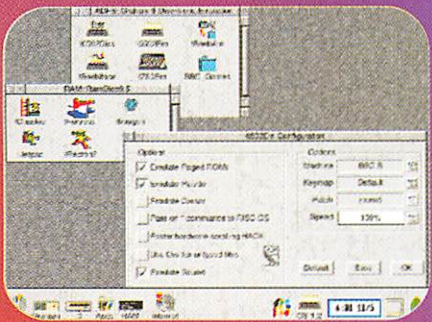




Since my StrongARM processor clocks over at about 200 times the speed of the BBC Micro's 6502, I didn't expect any speed problems. Nor were there any. 6502Em is normally configured to emulate at 100 per cent of the BBC Micro speed, which means that on a StrongARM Risc PC it is mostly idle. Cranking it up to 10000 per cent, which really means 'as fast as possible', is to say the least an experience. *Snapper* ran at just over 12 times normal speed, with the ghosts converging on the player so rapidly that an entire three-life game was over in less than five seconds. *Zalaga* is a manic blur, and none of my frogs in *Hopper* ever made it across the road.

Transferring software

How can you get BBC Micro programs to run on the emulator? One way is to download them from various Internet archives, which keep everything released by the top dozen or so



BBC software houses. If you have old tapes, Warm Silence can supply a simple interface – from the parallel port to audio in/out plugs – and *Tapes*, a program able to read BBC, Spectrum, Amstrad, TRS-80, Commodore or Memotech cassettes. Another optional extra is the *6502 Support Pack*, with a disassembler, a de-archiver and a set of hacks into most of the famous games.

Anyone wanting a BBC Micro emulator couldn't do better than 6502Em. Highly recommended.

Product details

Product:	6502Em (BBC Micro emulator)
Supplier:	Warm Silence Software
Tel:	(0585) 487642
Fax:	(01608) 737172
E-mail:	Robin.Watts@wss.co.uk
WWW:	http://www.wss.co.uk/
Price:	£15 + VAT or £25 + VAT if bought with Z80Em (Spectrum) emulator
Pros:	Fast • Good hardware support • Correct screen effects and sound
Cons:	Doesn't come with ROMs for BBC Master, Compact or Electron
Product:	6502Em Support Pack
Price:	£8 + VAT or £15 + VAT if bought with Z80Em Support Pack
Product:	Tape Support Pack
Price:	£5 + VAT including circuit diagram for interface. Interface ready-made at £15 + VAT

GAME SHOW

Steve Mumford

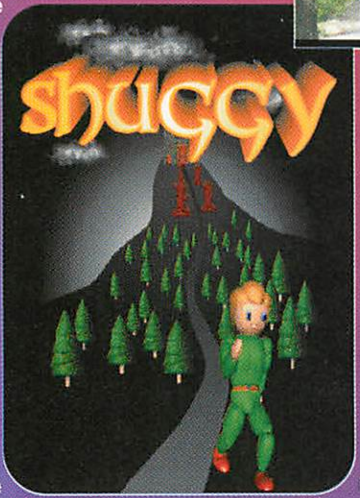
previews two forthcoming Acorn games

The flowers are blooming; the birds are singing. Spring is in the air, and that must mean it's time for another Show, along with all the rumours and promises about new products that go with it. By the time you read this, the show will be over and the long stream of prospective releases will have been whittled down to a select few, but for now there's a veritable gaggle of embryonic games jostling for position. Two titles in the final stages of preparation are Werewolf Software's *Shuggy* and Skullsoft's *Arya*, and I took the opportunity to give them a quick once-over before their release.



Shuggy

Shuggy is a traditional, 2D platformer and follows the adventures of a young elf as he attempts to save his home world from the obligatory evil overlord. Puzzle-based in nature, the game consists of the familiar 'pick up and use' approach in which objects are recovered then put to use at the appropriate point. Not giving too much away, in the demo version there's a piranha-filled fishtank that contains a key tied to the bottom. Not surprisingly, a pair of scissors and a protective glove can be found nearby, and so that particular puzzle is solved.



Shuggy's world is divided into distinct screens, and there's a slight pause as he travels between them – it's not a critical delay but enough to disrupt the continuity of the gameplay. The movement of the central character is smooth, although he has an odd tendency to perform forward flips whenever he jumps – reminiscent of *Dizzy* on the Spectrum. These acrobatics might account for the loss of control as he flies through the air; careful positioning is required if you want to know where you're going to land. Still, control is simple and it's easy to get used to Shuggy's little eccentricities.

A nice feature is that the game automatically detects whether a high-resolution monitor is being used and, if so, upgrades the quality of the graphics.

The demo is only a few screens in size, but the authors have added some nice weather effects to the forest scene they've portrayed. The demo that's available on the Internet only gives the briefest taste, but if the full program is as varied as the programmers make out, Shuggy should be an enjoyable puzzle-solving game.

Arya

Skullsoft's Arya opens with the experiences of a young man as he's falsely denounced as a necromancer and chased from his home village. On his travels he meets a surprisingly talkative dragon who just happens to need



his help, which provides a good excuse for him to become embroiled in a complex quest.

The game is based around a text adventure, but the programmers have added pictures and graphical puzzles to broaden its appeal. They've written their own parser in order to accomplish this, which means that it's not as flexible as some of the more dedicated ones around, but this approach has allowed them to use fonts, graphics and colour to good effect.

Outline fonts are used throughout the game, with the result that the text is clear and pleasant to read. Colour is used for emphasis and key objects are capitalised so that there's no confusion as to which word the parser's looking for. A toolbar is displayed at the bottom of the screen, allowing the user to enter the most common commands at the click of a mouse.

The representation of the game world is quite detailed, and the player's health, armour, encumbrance and fighting ability are all modelled. The passage of time is also simulated, and even if you sit still and don't type a word, the computer-controlled characters will still move around and get on with their lives. Weather even makes an appearance, so you'd better take an umbrella with you.

I've come across several typographical errors but on the whole the quality of the text is good, and this adventure might act as a good introduction to the world of interactive fiction as its difficulty level isn't set too high. Arya itself is shareware, meaning that you can try it for a week before you have to register – plenty of time to try out the game's puzzles and discover whether it's for you.



Product details

Product:	Shuggy
Price:	£25.95 + £1.50 p&p
Company:	Werewolf Software
Address:	23 The Spinneys, Bromley, Kent, BR1 2NT
WWW:	http://www.werewlf.demon.co.uk/ Download the demo from the Werewolf Web site
Product:	Arya
WWW:	http://www.eganc.demon.co.uk/skullsoft/arya.html See Web site for more information as well as the downloadable demo

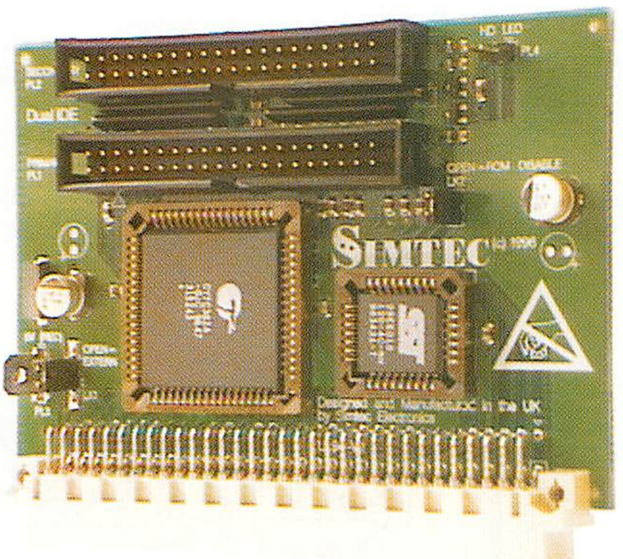
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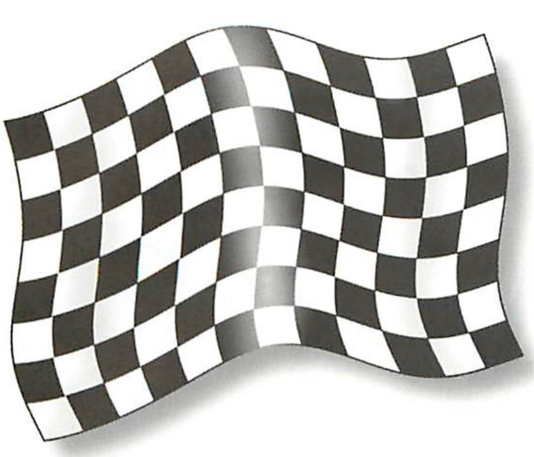
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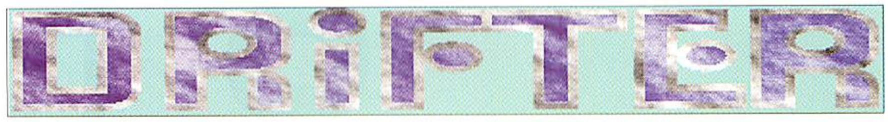
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Race into the future









Steve Mumford looks at Drifter, the new futuristic 3D racing game from The Fourth Dimension

The games drought has lasted long enough, and The Fourth Dimension have emerged from what one could call a period of hibernation to produce a game they describe as their biggest release for some years.

The first time I saw Andrew Docking's game in a playable state, I was irresistibly reminded of a Playstation title named *WipeOut* – for those who haven't seen it, it's best described as an anti-gravity arcade racing game. Futuristic craft tear round 3D circuits that buck and twist; as an added excitement, tokens can be collected to provide upgrades. Most allow you to go on the offensive and missiles, lasers and energy bombs make frequent appearances.

Not a WipeOut clone

Drifter, as I was told, was never meant to be a WipeOut clone, and subsequently the ship designs were altered to prevent people jumping to the wrong conclusions. However, I think it's impossible to separate the games entirely; the least one can say is that they fall into the same category.

Drifter differs from WipeOut in certain respects, the greatest being that the track isn't as radically 3D – although you can fly through tunnels, the roadway is perfectly flat and the steep slopes and tight turns of the Playstation title are missing. Weapons aren't as diverse either – Drifter provides three missiles with which to defend yourself and that's about it.

So, Drifter isn't WipeOut – that much we've established. Putting that aside, it provides a single-player, low-friction racing game. The action is fast, and once you're travelling round the course at full whack, the sensation of skidding round the corners is strangely satisfying. Eight tracks are supplied, presented in pairs. Prove to be a master of the first two, and you're allowed access to the second and so on.

Each race has five competitors, and you must come home in first or second place to receive any points – fail to score and you'll remain on the same pair of circuits. There are the usual obstacles to avoid, walls and bridges being the most common, but there are also special floor tiles that have an effect on the ship, perhaps boosting it to maximum speed or sending it spinning out of control.

The craft are reasonably easy to manoeuvre – they can thrust, turn left or right or, if the going's really tough, their lateral boosters can come into play nudging the ship to either side. Provision is made for keyboard, mouse or A3010 joystick input, so all bases are covered.

Using a combination of the controls, it's possible to go roaring into a corner before performing a graceful powerslide and popping out of the turn ahead of the opposition.

There are three craft to choose from, and although they look very similar, as their power increases, handling decreases and it's vital to learn how to control them at high speed through the tight turns to stand any chance of winning.

The graphics engine

What about Andrew's *Perpetual Motion* graphics engine? It's capable of producing some nice visuals, and the menu screens are pleasant to watch as the 3D buttons fly in and out. A choice of camera angles is available; not all are particularly useful but they do provide variety. The textures are perhaps a little garish during gameplay, and without track and object detail set to maximum, it can be hard to tell what's going on.

That brings us on neatly to the speed of operation – on an A5000, it's just playable at full detail, although it doesn't provide the type of screen update I was hoping for.

Turning down the track detail increases the speed of response of the ship and you get a much smoother ride; however, as a result the track loses its clarity and gives the impression of flying over coloured graph paper. Lowering the detail of the objects (walls, bridges and craft) turns them into shapeless blobs, and tracking their movement on the screen becomes very hard. Those with Risc PCs or StrongARMs shouldn't worry; Drifter becomes much more fluid when running on a faster machine.

Conclusion

Drifter is certainly a step in the right direction and will provide some amusement, but although the ships handle nicely the game still feels a little raw, and it lacks the addictiveness and the instant appeal of products such as *Stunt Car Racer 2000* or *StarFighter 3000*. However, the game and the manual both make reference to Drifter II, so I'm hopeful that the author will tinker with the already competent game engine and go on to produce a real world-beater.

Product details

Product:	Drifter
Price:	£34.95 inc VAT
Supplier:	The Fourth Dimension
Address:	PO Box 4444, Port St Mary, Isle of Man IM99 7RS
Tel:	(01624) 836744
Fax:	(01624) 836745

Acorn Virtuality part 4

Greg Scott creates some bells and whistles for the graphics engine

This month we'll be making a few small changes to the source code, as well as adding brand new features such as windows and doors. Objects can wait until next month – they'll be the last addition to the engine. Firstly, however, something slightly less impressive.

It seems that because so much time has been spent on the core of the program, the rendering process, a few areas of optimisation have been missed. The following lines (used in moving the viewpoint) are taken from last month's code:

```
x_cell=view_x/CELL_X_SIZE;
y_cell=view_y/CELL_Y_SIZE;
x_sub_cell=view_x % CELL_X_SIZE;
y_sub_cell=view_y % CELL_Y_SIZE;
```

At 20 frames per second this code would amount to over 80 division instructions — a figure which certainly cannot be accepted in a real-time engine. Fortunately, the optimisations required should be fairly obvious already. The cell size is 64 which is a power of 2, so using binary shifting we can speed things up enormously:

```
x_cell=view_x>>6;
y_cell=view_y>>6;
x_sub_cell=view_x & 0x003f
y_sub_cell=view_y & 0x003f
```

In terms of ARM code instructions we have transformed four lengthy division routines into a few ADD and MOV instructions — a vast improvement to help shave off those processor cycles and up the frame rate.

Figure I

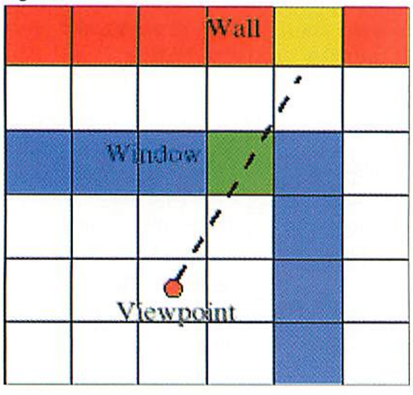




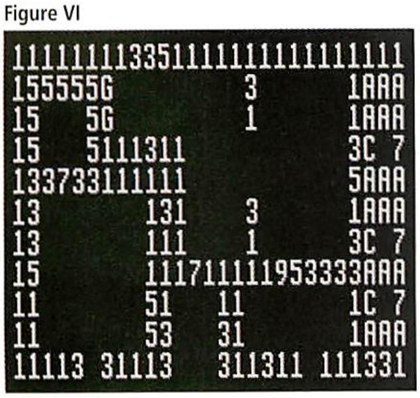
Figure II

See-through walls

To allow windows and other see-through walls to be used in our game we need to make some changes to the way that we perform the ray-casting process. In the current engine a ray is cast out from the viewpoint until it intersects with a wall. In order to see through a window or hole we must continue to cast rays beyond the first intersection to know what lies beyond the transparency in the wall.

Figure I illustrates how we must continue to track the ray after a collision

Figure VI

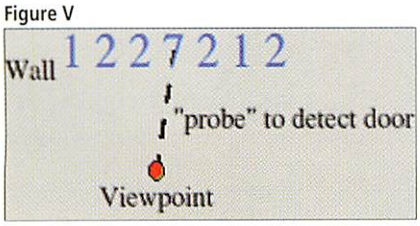


with a transparent tile, represented by numbers 9 and 10 in our world file. Once the ray has hit a normal wall we can then draw the column of the screen correctly.

Firstly we render the furthest wall away using the normal *ourlib_sliver()* function. On top of this "underlayer" we draw the sliver for the window tile. For this stage we must use a different version of the sliver renderer: *ourlib_sliver_mask()*. This function is almost identical to the usual renderer except that it treats any black in the graphic (colour zero) as a mask — nothing is drawn in its place.

The result of this layering produces the desired effect — it is possible to see into other rooms and corridors through transparent walls. Figure III is a screenshot showing how windows can be put to good effect in the world. Notice the new graphics in use (Figure IV) — these are the actual graphics to be used in *AUAttack*. The new lines of code needed

Figure V



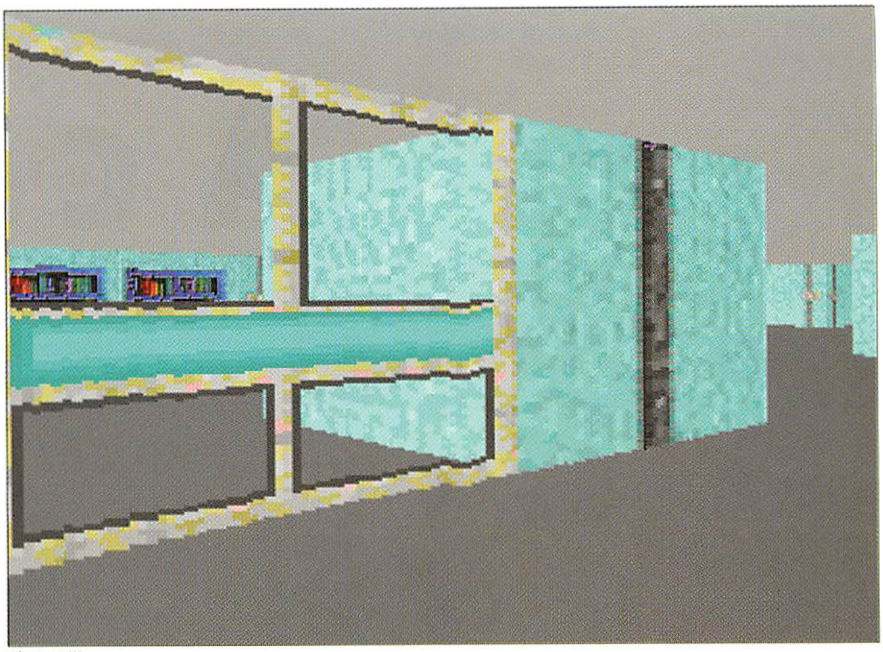


Figure III

to implement transparency are so similar to the existing ray casting code that there is no need to describe it any further. Browse through the new *aua_raycaster()* function to view the updates and a few minor improvements that tidy things up somewhat.

Restrictions

The new transparency system is slightly limited in terms of its capabilities. You should remember the following rules when adding windows to your world:

- The simplistic nature of the system means that you can't have a window onto a window
- Windows are best located with walls either side of them
- Adjacent windows don't always produce a correct effect.

It would easily be possible to correct the first problem by storing window sliver information in an array rather than in single variables. That way you could have rows upon rows of windows, though quite what for is beyond me.

Doors

This month we shall add a very simple implementation of doors to the program with some more code inside the *main()* function. For now we'll use the space bar to open doors in our world, though (as with all the other keys) it can be changed to suit your preferences.

To open a door we first need to work out if the player is close enough to open it. This is done by casting out a door-seeking "probe" from the player (Figure V). We must then test to see if this probe has ventured inside a grid square representing a door (we'll use numbers 7 and 8). If there is a door present we can begin to open it. Otherwise we leave everything alone — no door is near enough to the player. The door routine is very small, and almost identical to that of the viewer movement code:

```
dx=dx_table[view_angle];
dy=dy_table[view_angle];
door_x=
(int)((view_x<<16)+(dx<<3))>>16;
/* calculate x and y of "probe" */
door_y=
(int)((view_y<<16)+(dy<<3))>>16;
/* using same methods as moving */
x_cell = (int)door_x>>6;
/* work out the cell which the probe
resides in */
x_cell = (int)door_x>>6;
y_cell = (int)door_y>>6;
if(world[y_cell][x_cell]==7 /* or
whatever number you like */) /* is it
a door? */
{
world[y_cell][x_cell]=0 ; /* delete
door square */
}
```

In the above example, to open the door we simply delete the door square and the entrance is opened. This instant result isn't exactly realistic — it might be better to include some sort of opening animation. This coupled with some new transparency features could give some impressive results. It is, however, left as an exercise for yourselves.

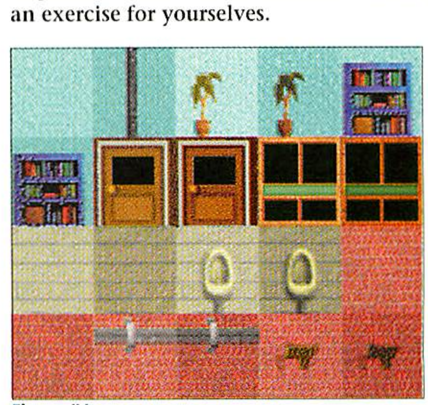


Figure IV

Acorn Virtuality

Figure VIII

Window Size	Frames/sec
320 x 256	113
288 x 200	145
288 x 160	162
128 x 128	426

More tiles

After many months of world-building it may have come to your attention that even though 20 tiles are available in your graphics file, the digits possible in the world text file only reach nine — in essence halving the variation of your level. This has now been remedied and the letters A, C, E, G and I can now be used to incorporate the previously unused tiles.

Check out the *aua_world()* function inside this month's source to see the changes made to convert the letters into their appropriate numbers in the world data array. Figure VI shows an extract of the new world file on this month's cover disc, which now makes use of all 20 tiles.

The command line

An extremely useful update we can make to the !AU_Attack application is that of command line arguments — passing the program a number of parameters to change the way in which it behaves. The parameters we shall pass to the engine are illustrated in Figure VII.

Using this method of executing the program we don't have to alter any of the source code to change variables such as window height, width and viewing coordinates — we only have to change the figures in the "!Run" file. The following example calls are described along with their effect:

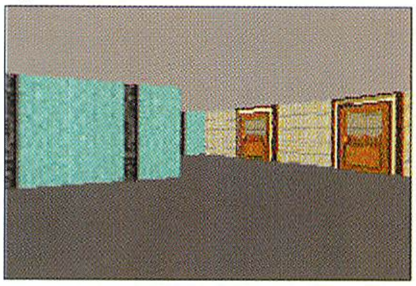
```
engine 400 400 200 128 128 768 8192
```

400,400,200 (ang) viewing coords, 128 by 128 window and 60 degree FOV

```
engine 1024 800 0 288 160 1728 10800
```

1024,800,0 (ang) viewing coords, 288 by 160 window and 60 degree FOV.

Figure IX



To program this feature we need to make use of C's built-in system for passing parameters to the *main()* function. In past versions of the code the *main()* function has been declared as follows:

```
void main(void);
```

Now, because we are looking to pass variables into this function we must alter the way in which it is declared:

```
void main(int argc,char *argv[]);
```

The names *argc* and *argv* are traditional but arbitrary. The integer variable holds the number of command line arguments passed into the function. The program name is treated as an argument itself, therefore *argc* can never be less than one. In our case it should be eight, because we are passing seven numbers to the program. We must be careful to ensure that the correct amount of information has been entered, or else errors may occur at a later stage in the program. You can examine the code itself to exactly how this is done.

Next month we'll be looking at objects within our game world and how we can move them around.

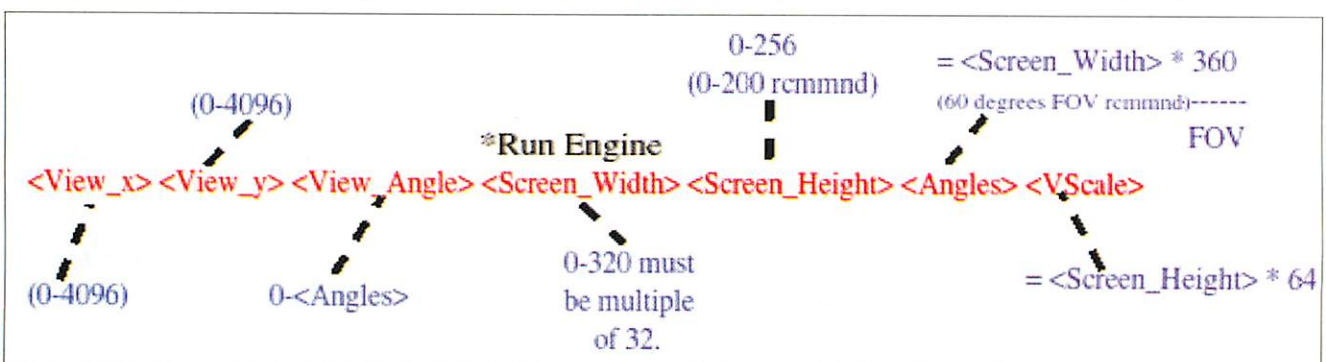


Figure VII

NEW

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ELECTRONIC font FOUNDRY

Hints & tips

HANDS ON

Rambles through

Acorn Wood

Another selection of problems and solutions from **Mike Cook**

If you were interested in making my FM radio adaptor in the September '96 issue I have some good news – a supplier has them for sale for about half the price I paid. They cost £15 with £1 P&P and are available from: Paul Lourdan, 2 Ferniehill Place, Edinburgh EH17 7AU, Scotland. Thanks to Tassilo Halbritter of Austria for putting me on the right track.

You might remember that last month Mr W A Jeffs was having trouble with some PIC chip blower software from Maplin running on the PC side of a Risc PC. I managed to contact the author, David Tait, over the Internet and it turns out that he works only 200 yards away from my office.

He explains:
There are a few things I do that may not be compatible with your reader's setup:

- I try to get the base address of the printer port hardware from low BIOS memory
- As you suspect I do direct port I/O
- I access the PC timer chip directly too

I would need to know a bit more about what is and isn't allowed before I could be confident of modifying the program to work on Acorn/486 machines. On the other hand the full source of my software is available so perhaps someone more familiar with these machines could do the port.

That just about spells out why the software would not work. It's the direct addressing of the hardware that does it. You could rewrite the software so that the input/output went through the BIOS calls quite easily but, it's the access to the timer that could be difficult. If you fancy a go at this the C source code is on the net at http://www.man.ac.uk/~mbhstdj/files/

However, I got a native Acorn system working last week and though it still needs a bit of tidying up it should be appearing in a magazine near you soon.

Phil Hughes, from Essex is trying to transfer files across computer platforms. He writes:
I have a 400 series Arc with no CD-ROM (the upgrade path is expensive!). I also have a PC which does have a CD-ROM. Is it possible to download files (clipart, fonts, utilities) from an Acorn ROM disc on the PC machine, via floppy, that can then be used on the Arc? Obviously the snag I've hit is that anything saved to floppy is in PC format and cannot be read by the Arc. Is there a software conversion utility?

All modern Acorn machines can read PC discs straight from the desktop – even from the outset the A310 could read them by the use of utilities. As I no longer have my A310 I can't look up what they were called but there were at least three. Try contacting a PD library; they are bound to be able to supply one. As an alternative you could hook up the two computers through the serial ports and transfer the stuff across using simple comms file transfer software.

Craig Anderson has been trying the I^2C interface and found it lacking, he writes:
I have knocked up a simple circuit based on PCF8574 devices and interfaced it to my A3010. Everything worked OK, however the data transfer speed was nowhere near what I had hoped for (taking approximately 3mS to send a single byte). I^2C devices are able to transfer data at 100 Kbps (in fact some newer devices can manage 400 Kbps).

How is I^2C implemented under RISC OS? (I haven't gone as far as disassembling the I^2C module) Can it be persuaded to run faster? Is the SCL clock rate programmable?

The I^2C interface bus is implemented entirely in software and that, in part, limits its effective speed. If you make the clock faster you have trouble with latency – that's looking for a clock signal and making sure you will see it when all the interrupts are going off. In the current implementation the clock signal is not programmable. The drives have changed little since the first Risc computer. Now however, as processors have got faster it is possible to speed things up somewhat. A module written by Baildon Electronics will speed up this bus. They've allowed me to distribute it and you can find it on the cover disc.

I e-mailed him the module and, via the magic of the internet, Craig replied:
The I^2C module you sent me worked like a dream. Performance is around five and a half times faster than the original (on an A3010) and around four times faster on an ARM3 A410. Many thanks.

Jonathan Brady has design ambitions. He writes:
I am thinking of designing an Acorn joystick podule. Basically I am considering using the I^2C bus to provide the main hardware, and a ROM chip for the controlling modules. Could you possibly supply me with or refer me to somewhere where I can get circuit diagrams to implement a ROM chip. The chip does not need to be big. My exact requirements are unknown but are likely to be less than 128K (other software may be included on the chip), but it might be useful if an EEPROM could be used (although cost might be prohibitive) and if more than one chip could be placed on the board at a later date. Any help would be appreciated.

The I^2C bus is fine for implementing a joystick but the cost of putting the controlling modules in EPROM could be prohibitive. When most modern computers have a hard drive it is much more cost effective simply to arrange a file to load during boot up. To use firmware you need to implement nearly the whole of the expansion card interface – it matters little exactly how big the ROM is. This involves quite a lot of hardware and in my opinion is simply not worth it for your proposed application. It would certainly rule out any commercial viability for the project. For your interest there is an Acorn document describing the expansion card specification. There might be a later version but the one I have is Acorn part number 0472,200 Issue 3, January 1992. I am not sure if it is still available from Acorn.

I had an e-mail from Llewelyn Richards in New Zealand:
In New Zealand we have a long-running Commission of Inquiry into possible tax scams. On the TV news we have seen pictures of lawyers questioning businessmen who 'can't remember' what happened to a million dollars, or Serious Fraud Office staff who admit that they gave an opinion after examining boxes full of documents for a couple of hours at the most. It's locally known as the Wine Box Enquiry because the documents first emerged from the boot of someone's car in a wine box.

In the Commission's hearing room every lawyer and the Commissioner has a computer monitor which are all lying on their sides. You can see the grid-work that is usually at the bottom on one side, and all the screens are in the 'portrait' shape, showing the whole of an A4 page at a time. Commercial screens oriented in this way are available, but all those at the wine box inquiry are 'landscape' screens rotated through 90 degrees. What needs to be done to get an A4000 such as I have, or any more recent Acorn, to turn its display through 90 degrees so I can put my monitor on its side and see and work on the layout of a whole A4 page at a time?

I have seen this trick pulled on a Mac many years ago. There was a monitor you could rotate through 90 degrees. As you did so there was a switch that sensed this and the software changed the way words were displayed on the screen so you got a portrait display and not a landscape one. I wondered if there was something you could tap inside the Acorn machine so I asked David Walker at Acorn. He said:

"Errr... wibble. We have had NewsPAD working in both portrait and landscape by using the somewhat crude procedure of grabbing the screen as a sprite, rotating it through 90 degrees and displaying it but this seriously chews on system performance. There is no software for distribution

available to do this job. Personally, I'd recommend that he goes for a hardware solution (although swapping the X and Y sawtooth generators around and recalibrating the convergence etc for the new tube geometry is not a job for the fainthearted!)"

Not for the faint hearted indeed, still I think there should be a more elegant solution around. Anyone fancy working on that?

Malcolm Ripley has been trying to speed up an already fast computer. He writes:

Does RMFaster work on a Risc PC 700? The reason I ask is that this does not show any difference when used on my machine. I ran the following program with ROM and RMFaster basic on my old A310 and my Risc PC 700:

```
T% = TIME
FOR A% = 1 TO 100000
A=SQR(SIN(45))
NEXT A%
PRINT "This is ";TIME-T%
```

The timings obtained were:

1	My old A310	Result = 843
2	My old A310 (RMFaster BASIC)	Result = 829
3	Risc PC	Result = 441
4	RiscPC (RMFaster BASIC)	Result = 441

This seems to prove that my RAM is clocked at the same speed as my ROM which leads me to three conclusions:

- RMfaster is not supposed to show an improvement on a Risc PC, so why have some readers sent in hints and tips suggesting otherwise?
- My ROM is clocking as "fast" as RAM – unlikely
- My RAM is clocking as slow as ROM – my main suspicion

This is the sort of reader I like because after a few days he supplied an answer:

I was informed from the Beebug man that my timings may be due to the program executing entirely in the cache – something I never thought of. So I changed the test so that this would not be the case. Hey presto – RMFaster is faster! Problem solved. Although I am still curious as to how the IOMD chip works with respect to clocking the RAM and ROM. The old A310 (which I still have) could be speeded up by 'programming' the MEMC chip. Is the IOMD similar or possibly smarter, so preventing the speed freaks from blowing their memory?

The problem here, if you can call it such, is that the Basic interpreter is filling the cache so it does not matter at what speed the memory that holds the interpreter is clocked. However I am surprised at the results that seem to show that the Risc PC is only twice as fast as the A310. I ran this test and got a value of 66 on my RPC 600 with StrongARM processor. By the way, that SIN calculation – remember it takes in values in radians not degrees.

I did mention this to Dave Walker at Acorn and he came up with this very interesting snippet:

"RMFaster is now heading towards deprecation; it is no longer guaranteed to move ROM-based modules into RAM for execution, as this process can hang the machine for some modules written in C. We've applied sanity checking such that 'suspect' modules won't get moved. It still works on some modules (particularly assembler-written ones), but Your Mileage May Vary."

Dave Lawrence wrote back to me this month. He says:

Thanks for your advice a few months ago about connecting an old SCSI hard drive to my A3010. You suggested buying a printer port interface (which I finally got round to doing over Easter) but I'm not sure that you're aware of the following drawbacks:

- The maximum drive size it can handle is 500Mb
- The interface takes its power from the first device in the chain (not the computer). Not all devices can provide this power (called termination power), although if that's the case a separate upgrade can be bought
- The interface is not compatible with all makes of CD-ROM drive
- Incidentally, it does come with a filing system which can handle removable discs.

Anyway, now to the problem. I have a SCSI cable which has 25-way D connector at one end and a 50-way centronics-type connector at the other (I understand this is standard). Unfortunately, the drive has a different type of connector – it is a 50-way male socket with two rows of pins lined up vertically (not offset as in D).

I have managed to find a connector to fit it. I don't know if you've seen this type on a hard disc before, but what I would like to know is whether it has the same pin out as the centronics type connector.

In other words, if I remove the centronics connector from the cable, put the wire that was connected to pin n on the centronics connector to pin n on the new connector, would this work?

You will find the problem of the maximum size of the disc is due to RISC OS not the SCSI interface. What you need to do is partition the disc. While I don't know of a way of partitioning an IDE disc, most SCSI format utilities will allow you to split a large drive into a number of seemingly separate discs. Remember however, that although they appear as separate discs it is in fact the same physical device. A student forgot this and backed up all his work on what he thought was a separate disc. When it crashed he lost the lot.

The cable with a 25-way D type connector on one end is not the standard SCSI connector. It is used by Macintosh computers to connect the computer to the first SCSI device and some Acorn interfaces also use this type on the expansion card.

The standard SCSI connector is 50-way Centronics type of plug. However, internally fitted SCSI devices use a 50-way IDC connector – it's perhaps this type you have. The pin out of the two types are the same, so a small IDC lead with the appropriate sockets should complete the conversion. I wouldn't recommend trying to remove one plug and replacing it with another.

Finally John McIntyre wants some fundamental interfacing information:

I want to control the parallel port of my Risc PC and have read some of your articles in *Acorn User* but don't understand how to drive and read from the parallel port.

There is no reference to the Sys Parallel Op call that you use in your Pport Mod and !PortMon program in my copy of the Programmers Reference Manual. Can you tell me where to find out about this or explain to me?

The calls are documented starting on page 477 of volume 2 of the RISC OS 3 version of the Programmers Reference Manual. However, there is really nothing to them if you look inside any of my applications.

The first number you pass determines the function. A 0 will read the status and data registers, a 1 will write to the data register and a 2 will read/write the control register.

This last one is perhaps the most tricky as the value in R1 (the second number you pass) is an EOR mask and in R2 (the third number) is an AND mask. Then the new state of the control register is equal to the old state AND R2 then exclusive ORed with R1.

The values returned are the old state of the control register in R1 and the new state in R2. When passing a 1 to the Parallel_Op call the second number is the one that is written to the data register.

Finally when passing a 0 to the routine the data register are returned in R1 and the status register in R2. Your best bet is to experiment with one of my working programs and get a feel for what each does. AU

How can you help your children when they know more than you?



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Dave Acton and
Dave Lawrence
present five pages of
fractal fun and frolic

star info

Little protection

Author: David Gamble

It's quite amazing how much damage you can cause to, ahem, 'your' computer by a little careful/less use of the CMOS RAM. Configuring alien monitor types, removing your font cache, setting up half a dozen extended DOS partitioned CD-ROM drives or even just making the keyboard auto-repeat something sillllllllllllllllllly.

David Gamble is one of the many people who have sent us CMOS RAM protectors over the years, but his scores highly in our rather bizarre rating scheme because a) it's actually two tiny BASIC programs and b) it took us about half an hour to work out what those 179 bytes actually did!

The two progs are cunningly called *On* and *Off*. To protect your CMOS RAM run the former; to restore control over those battery-backed bytes run the latter.

How it works

We've been sadly neglecting our *How it works* section in recent times, so we thought we'd make an effort now and explain the workings of David's prog.

To help you a little to start with, we have 'uncrunched' the lines first.

```
DIM var 16
```

Set up a small block of memory from which we are going to set a system variable.

```
SYS "OS_Module",6,,,16 TO ,,mem
```

Claim 16 bytes of memory from the RMA. This is going to contain a small piece of code and so needs to be in a non-'volatile' area of memory

```
!var=mem
```

Store the address of this block in our variable

```
SYS "OS_SetVarVal", "zzz", var, 4, 0, 1
```

Create the system variable 'zzz' – 4 is the length of the variable and 1 is the type (a four-byte integer)

```
!mem=&E35000A2
mem!4=&11A0F00E
mem!8=&E8BD8000
```

Create our piece of machine code

```
SYS "OS_Claim",6,aB%,4
```

Claim the ByteV vector (number 6). Those three hex values are actually the ARM instructions

```
CMP r0, #&A2
MOVNE pc,r14
LDMIA sp!,{pc}
```

By claiming the ByteV vector, this code is called every time an OS_Byte [*FX] call is made.

It checks to see if R0 is 162 and passes on the call if it is not, if it is, an attempt has been made to write to the CMOS and the return address is popped off the stack instead, thus preventing the call from happening.

To undo the protection, the OS_Claim needs to be released.

For this to happen properly the address claimed needs to be given to OS_Release. This is the reason for the 'zzz' system variable. The *Off* program looks like this:

```
DIM var 8
```

Make space for reading the variable

```
SYS "OS_ReadVarVal","zzz",var,4,0,1
```

Read the value of zzz

```
SYS "OS_Release",6,!var,4
```

Release the claim the ByteV vector

```
SYS "OS_Module",7,,!var
```

Free the memory claimed from the RMA.

If you run *Off* more than once, you will receive the wonderfully informative *Bad Vector Release* error as no error protection is built in!

The perfect chime

Author: Alan Minns

Chimes is an update to Jonathan Rawle's original church bell chime prog we featured in the December 1996 issue. In the words of (new) Chimes' author **Alan Minns:**

'I must admit that my introduction to both computers and programming began when memory was both scarce and expensive, and when chips were either square-section prisms of fried potato eaten with fish or were the result of over enthusiastic applause with one's spoon on the edge of a tea cup!'

Quite. He continues:

'Resulting from the conditioning of those days, I tend to be mildly concerned when a fun type application like Chimes takes up a whole page of memory in addition to the 14K of the voice module in RMA. I succumbed to the temptation of rewriting it as a self-contained module and this is the result. Although I did alter the timing a little, the main change is that the program no longer redefines the number of voices. Instead, the bell is assigned to channel one only for the duration of a chime sequence. Whatever voice had been assigned to the channel is then restored.



Altogether a much better state of affairs, we're sure you'll all agree.

Icon see for miles

Author: Joe Kelleher

IcoConv is a utility from **Joe Kelleher** that converts Windows icons to RISC OS sprites. This one differs from others in that it can also read sets of icons stored in .EXE, .DLL or .ICL files.

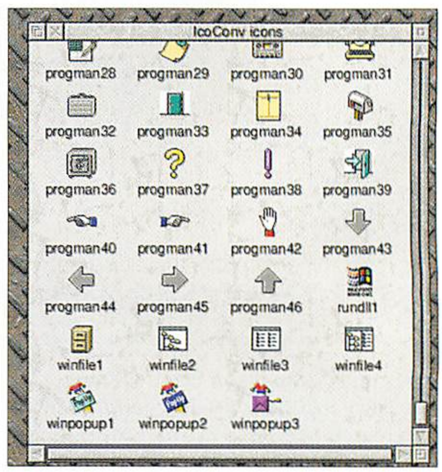
Click on the iconbar icon to bring up a window showing all the icons currently stored in the program. To load in new icons, drag a file either to this window or the iconbar icon. Files between 766 and 768 bytes long are interpreted as .ICO files, and other files are interpreted as .EXE, .DLL or .ICL files (there is one handler for all three, as the formats for these are all very similar). Any three-letter DOS extension (separated by a "/") will be removed from the name the icon has in the saved sprite file.

A menu of options is available from either the main window or the iconbar. 'Save icons' will bring up a save box from where you can save the icons currently stored in the program. They will all be saved in a single sprite file. You can save the icons either as 16 colour Mode 27 sprites with a Windows palette attached, or as 256 colour Mode 28 sprites with no palette.

Select 'Clear icons' to remove all the icons currently stored in the program. All the memory previously used by the icons will be freed. Select 'Scan for icons' to bring up a window then drag a directory here to scan its contents for files containing icons. Click 'Go' and a Filer_Action-like window will appear which will scan though the files, loading in any icons it finds.

The 'Report errors' option on the menu can be ticked or unticked. If it is ticked, an error message will be generated if you try to load in a file which cannot be interpreted as a file which *could* contain icons. If it is unticked, any bad files will simply be ignored. This could be useful if you want to drag a collection of files into the program, only some of which are capable of containing icons, and don't want errors to be generated for those that aren't. Note that some executables written for early versions of DOS cannot contain icons, and an error message will be displayed if the Report errors option is ticked and you try to load such a file.

If you have a PC partition, you can try this program on some of the files in there. Your Windows directory (if you have Windows installed) should contain a fair



number. It would be inadvisable to do a scan on the entire PC partition if large collections of icons are to be found there.

You can also find .ICO icon archives on PC bulletin boards and Web sites. You should also look out for a Windows program called *Icolib*, which contains about 5,000 icons as .ICL files. By registering Icolib, you can receive a further 5,000 icons or so.

Dezintegration

Author: James Andrews

Our long running library of graphical excursions is extended this month by **James Andrews**. His contribution *Zinter* is based on a very simple idea and is surprisingly effective for such a small program. It draws a circle slowly spiralling out from the centre of the screen. It is plotted in a random colour and, in James' words, is EORed loudly. The terribly cunning bit is that after every circle is added a small piece of machine code is called which decrements the value of each pixel on the screen by 1 – unless it is already black. As a result, the image built up slowly disintegrates from the middle outwards.

We tried updating the program to use a fully programmable 256 colour palette but quite unexpectedly the results were decidedly poor when compared to the original Mode 13 fixed palette.

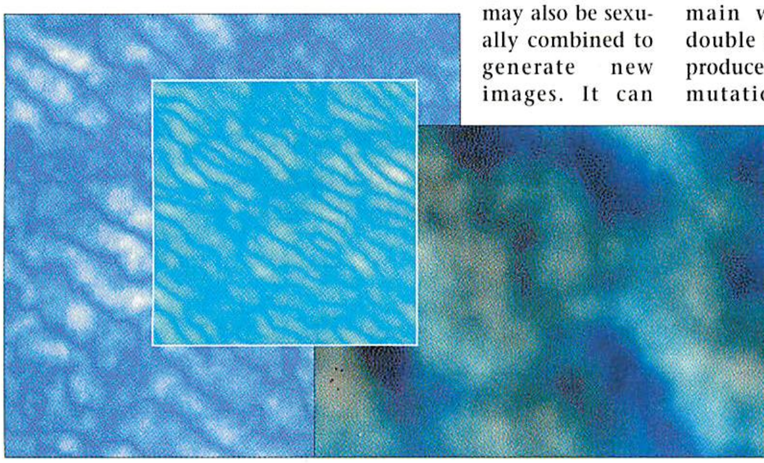


Cloud cuckoo

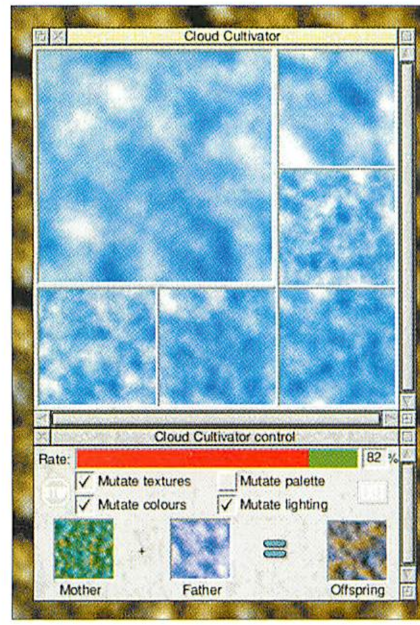
Author: Tim Tyler

Our previous cloud challenge attracted a huge variety of submissions and although we announced the winner in the May issue, we did receive one other entry which we thought was worthy of a piece by itself. This is *CloudCult* by **Tim Tyler**. In operation you may well notice its similarity to Tim's popular *Texture Garden* program – we're quite happy with this as he's gone out of his way to produce a couple of dozen very 'cloudy' textures. Tim says:

'Cloud Cultivator generates cloud images using a range of techniques including inverse two-dimensional fast-fourier-transforms of filtered noise. Genetic methods are used to seed them enabling breeding, selective mutation, cultural transmission of colour and sexual recombination to be implemented. The program supports seamless tessellation, 24-bit colour and full control over cloud animation. The program can generate static images of clouds which may be saved, and mutated offspring may be generated. Different species of clouds may also be sexually combined to generate new images. It can also be used to generate animations, which may be saved as directories of sprites, multiple image sprite files or animated GIFs, using the InterGIF interface.



Run the application and drag a few text files from inside the "Textures" directory into its main window. Placing a cloud texture into the larger area in the main window and double clicking will produce a number of mutations of the image.



Any of these can be dragged back and mutated again.

Opening the tool window fully reveals a '+' and an '=', dragging textures into the two boxes either side of the plus and clicking the equals will combine the textures into a new one. This happens randomly, so further clicks will produce different effects.

The program supports full interactive help and for more detailed information on how to use the program you should refer to this.

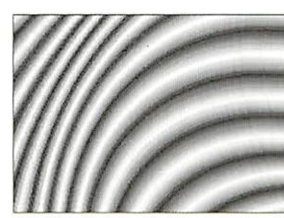
Ellipse service

Author: Scott Boham

Scott Boham (who we insist on calling Scott Bonham sometimes) is the regular behind this traditional eye-strainer.

The idea is simple – Basic's exotic ELLIPSE FILL command (one of the most underused in my humble opinion) is used to plot a series of not-quite-circles in repeating bands of sixteen colours. These are then cycled in time honoured tradition and the effect is probably not to be recommended if you value your eyesight.

Of course, the true test of this sort of doodle is to see if the desktop appears to be moving about after you've finished looking at the thing. Rest assured, it does.



IFS and buts

Author: Jan Vlietinck



Well, no buts about this item really. It's a beautifully animated bit of fractal fun from our man **Jan Vlietinck**. IFS stands for *Iterated Function System* and is a simple way of defining a wide range of different iterative designs – dragon curves, gaskets, ferns – all sorts really.

Our last venture into the world of IFS was actually way back in September 1994 when we carried Richard Seago's fast demo. Jan's IFS demo adds a new twist by 'in-betweening'. The IFS designs are defined by a few transformations which are applied recursively.

These are stored in DATA statements within the program.

Jan's prog works out the next design and then performs a smooth animation from the current one to the new.

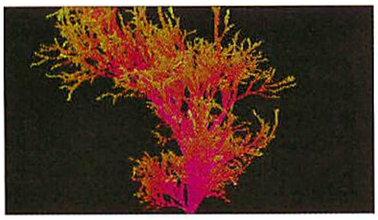
Obviously, some fast code is used to do the business and this is a hallmark of Jan's programming.

Tree-mendous

Author: Philip Mellor

Well, come on – we've had so many tree-like things in *info over the years we're running out of puns. This particularly piece of forestry comes from 16-year-old **Philip Mellor** of Leeds and is of the magic variety.

When run, you will be asked to supply a few numbers to specify the nature of your tree – number and angles of splits and so on.



Defaults are provided if you are lazy, and we strongly recommend that you do not cycle the colours while plotting as this will take an age.

When done, the palette is cycled to produce a dramatic effect, not dissimilar to that produced by lightning.

Not that we recommend standing that close to trees during thunderstorms.

Cold coffee

Author: Clem Edmond

....is the rather melancholy title of the latest *Digital Symphony* offering from regular **Clem Edmond**. We were unsure as to whether this was in any way inspired by the classic 8-bit BBC tune *ColdTea* (sometimes known as *ClodEat*), but seeing as it sounds more like the closing titles of a late '80s sci-fi/horror film we decided that the similarity of names was purely co-incidental.

Ripple time

Author: Philip Mellor

Not one but two Basic sprite mapping demos now from **Philip Mellor**. (I'm sure I've heard that name before somewhere.) They show just what can be done with a little bit of thought and a graphics window.

Both programs look for a sprite file to mutate. You will find one in the directory – click on *!SetCSD* so that the demos will find it.

'The sprites are distorted using the VDU 24 command. By creating lots of graphics windows – one for each line of pixels – each row can be plotted at different positions (such as along a sine wave) or in different sizes.



'In *Perspective* each row of pixels is scaled to plot the sprite in perspective – use the mouse to move the sprite around the screen. Change the value *st* in the second line to 8 or 12 if you're using an ARM250 or ARM2.



'*Ripple* ripples the sprite as if it's under water. Moving the mouse horizontally changes the amplitude of the sine wave; moving it vertically alters the wavelength. Try a small amplitude and a large wavelength, or vice versa. Again, change the value of *st* in the second line to 8 if you're using an ARM2 or possibly an ARM250.'

SWI not

Author: Jonathan Rawle

If you tried **Jonathan Rawle**'s *SWIconv* program on the February disc you may have noticed that the version published was in fact garbage. Due to a small hole on a hard disc, the program became mangled. Apologies to Jonathan and all those who were disappointed, and thanks to those who pointed the error out. We'll try again this month...

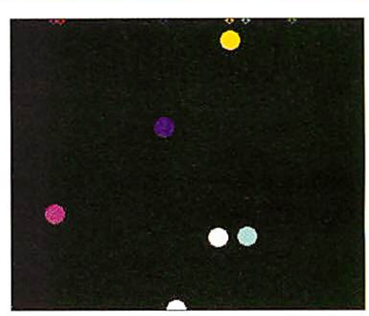
Keep 'em up

Author: Philip Mellor

We continue with a medley of items from **Philip Mellor** with this little juggling game called, let me think, oh yes – *Juggler*. We both played this game while on the phone to one another and can reveal that while one of us managed an excellent score, the other was absolutely abysmal at it. (I reckon DL's ability to juggle in real life gave him an unfair advantage.)

'The aim is to keep as many of the balls in the air as possible by bouncing them off the white ball, which you can control using the mouse. Note that vertical movement is restricted.

'The game is over if you have less than two balls left in the air. The current score is shown in the bottom left hand corner of the screen – you score one point every time you bounce a ball. A new game can be started at any time by clicking Select. The highlights on the balls can be toggled on and off by clicking Adjust.'



Star info

If the map fits, apply it

Author: Mark Hollis

Another venture into the realms of texture mapping now. Mark Hollis is the creator of these two demos – a Basic version which should be an invaluable example of what the process involves, and a fast machine-code translation. The author explains the ins and outs of mapping...

'Texture mapping is the process by which pictures or sprites are mapped onto the surfaces of 3D objects. This gives a greater sense of realism in games that use polygon graphics, such as *Ridge Racer* on the Sony Playstation.

'First it is necessary to design a model describing a simple situation. In this model the viewpoint is at the origin, and the screen is in a plane parallel to the xy plane and distance *viewdist* from the viewpoint. The texture sprite is in a plane described by a two-stage transformation. This takes a sprite from its initial to final position with a rotation and translation.

'Initially the texture sprite is in the xy plane



with its centre at (0,0,0). This texture plane is then rotated about the z, y, and x axes in sequence by the angles *zrot*, *yrot*, and *xrot* respectively.

'This is achieved by rotating the unit vectors *i*, *j*, and *k*. Vector *i* represents one unit along the x-axis and has components (1,0,0), vector *j* represents one unit along the y-axis and has components (0,1,0), and vector *k* represents one unit along the z-axis and has components (0,0,1).

'For example, to rotate the plane 30 degrees about the z-axis, would give vector *i* components of (0.866, 0.5, 0), vector *j* components of (-0.5, 0.866, 0), and vector *k* components of (0,0,1).

'Finally the texture plane is moved so its centre is at (*xdist*, *ydist*, *zdist*). You now have a model for any situation.

'Consider a ray of light which travels to the view point (0,0,0) through the pixel at (*xx*, *yy*, *viewdist*) in the screen plane and intersects the texture plane at (*x*, *y*, *z*).

'To simplify the maths, the complete model needs to be re-orientated so the texture plane is parallel to the xy plane. This is achieved by rotating everything about the viewpoint. So to discover which pixel in the texture sprite is mapped to the pixel in the screen plane, you just need to find its x and y co-ordinates relative to the centre of the texture plane.

'Two vectors are used to represent points in the texture and screen planes after re-orientation. Vector *v* represents the centre of the texture plane and has components *xv*, *yv*, and *zv*.

```
xv = zdist * zi + ydist * yi + xdist * xi
yv = zdist * zj + ydist * yj + xdist * xj
zv = zdist * zk + ydist * yk + xdist * xk
```

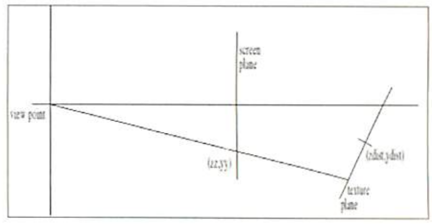
'Vector *s* represents the pixel in the screen plane and has components *xs*, *ys*, and *zs*.

```
xs = viewdist * zi + yy * yi + xx * xi
ys = viewdist * zj + yy * yj + xx * xj
zs = viewdist * zk + yy * yk + xx * xk
```

'Figures I and II illustrate the position of the planes before and after re-orientation. From Figure II it can be seen that the large triangle constructed from the dashed line and the smaller shaded triangle are similar triangles.

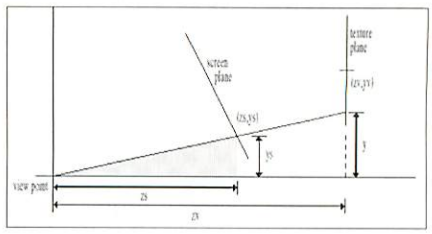
'Therefore y/zv = ys/zs, so y = zv*ys/zs. This gives the co-ordinate relative to the viewpoint. To make it relative to the centre of the texture plane subtract *yv*. The *x* co-ordinate is calculated in the same way.

'I have written two programs to demonstrate texture mapping to you. The first is written in BASIC and this scans the rectangular area a texture appears in on the screen pixel by pixel, so you can study the process. Each program works exclusively in mode 15 and draws a three- dimensional slab onto which a 256 x 256 pixel sprite is mapped. The position of the slab is specified by the variables *xdist*, *ydist*, and *zdist*, and the orientation by the variables



xrot, *yrot*, and *zrot*. The variable *viewdist* gives the distance from the view point to the screen.

'The second program performs texture mapping in real-time and contains significant chunks re-written in ARM. This displays an identical slab and rotates it in the texture



plane. The variable *zstep* is currently set at four degrees and can be decreased to one degree, so it runs smoother on faster machines.

Performance starts at two frames per second on a machine with an 8MHz ARM2 processor and increases to 20 frames per second on a machine with a 40MHz ARM710 and VRAM. It is interesting to know that the VRAM alone virtually doubles the performance of a machine in mode 15, irrespective of the processor.'

Compatibility table

Program	RISC OS 2	RISC OS 3.1	RISC OS 3.5+
IFS Morph	No	Yes	Yes
!CloudCult	No	Yes	Yes
!SWIconv	No	Yes	Yes
Chimes	No	Yes	Yes
Juggler	No	Yes	Yes
MagicTree	Yes	Yes	Yes
Perspectiv	No	Yes	Yes
Ripple	No	Yes	Yes
!IcoConv	No	Yes	Yes
Textwe	Yes	Yes	Yes
On/Off	Yes	Yes	Yes
Spiral	No	Yes	Yes
Zinter	Yes	Yes	Yes

*QUIT

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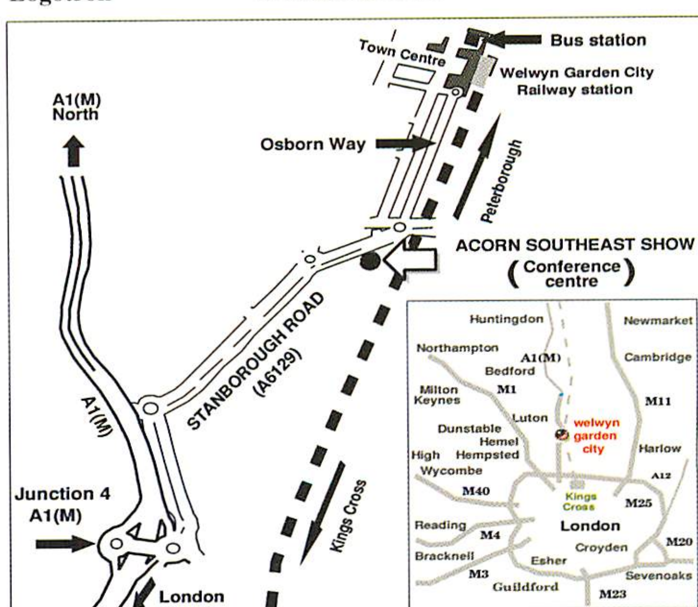
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Frequency in the balance

Mike Cook re-uses some hardware for easy application

Completing the theme of computer-controlled audio devices, this month I would like to look at building a graphics equaliser. While to some youngsters an equaliser might conjure images of a gun-toting avenger, this project is really about a super tone control.

In the beginning was a single control called *tone*. When I was young I often thought its sole purpose was to make the sound worse because set anywhere other than at one end the sound turned mushy. Then as hi-fis emerged you got two controls – bass and treble; one allowed you to control the top frequencies and the other the bottom ones. Finally the rotary controls gave way to sliders and an extra mid-range tone control was introduced.

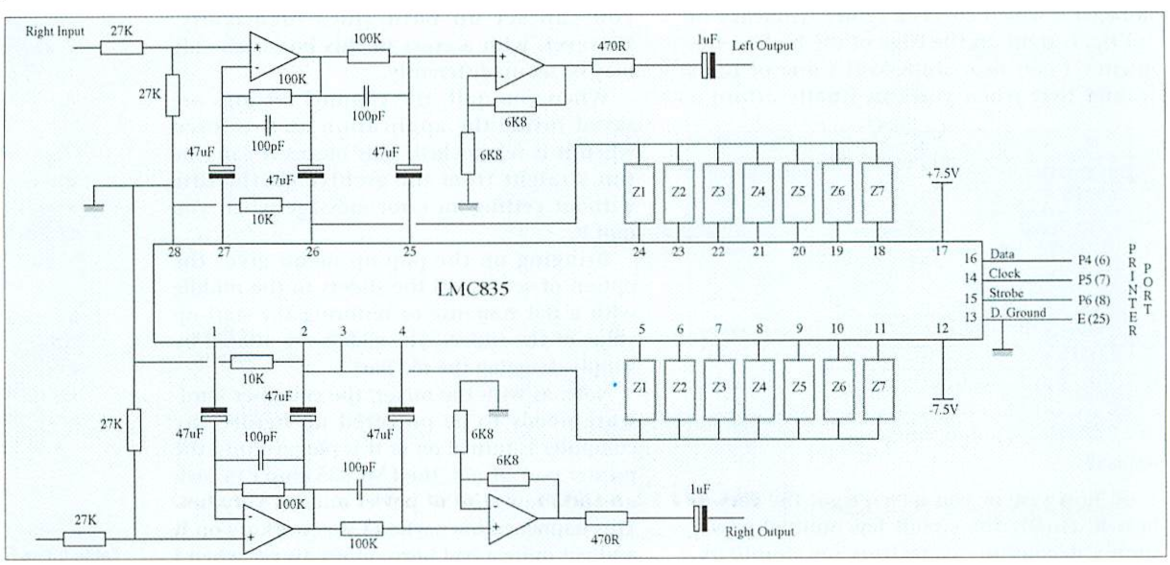
The tops of the sliders on these three controls could be thought to resemble a graph of the frequency response you were producing and thus the Graphics Equaliser was born. Nothing to do with graphics but a series of controls that graphically show the frequency response forced on a circuit. The idea is that you can compensate for room acoustics or speaker response by cutting and boosting certain frequency bands.

This design is for a seven-channel stereo graphics equaliser and uses the LMC835 chip I first used in the April 97 issue of *Acorn User* as an audio mixer. The chip can be used for a 12-channel mono equaliser but in most cases seven channels is adequate.

Basically what we do is break each channel up into a number of overlapping frequency bands and then mix them back together with a different gain for each band. It's this mixing function that's performed by the LMC835 chip and we have to make the band filters and attach them to the chip.

The full circuit diagram of this is shown in Figure I and as you can see it's a fairly symmetrical circuit between left and right channels. The LMC835 needs to be fed with +/- 7.5 volts and that can be used for the op-amps as well.

Figure I: The full circuit diagram



However, to get the maximum dynamic range out of the amplifiers these need to be powered with +/-15 volts.

This is because the LM833 amplifier, while being of good low noise audio quality, can't drive its output to more than a few volts of the power rail. In practice I used the same voltage for all the parts and it did work fine. The computer interface side uses three signals – clock, data and strobe – connected to the printer port. Instead of the usual pin assignments of bits 0, 1, and 2, I have used bits 4, 5, and 6, so you can use this project along with the

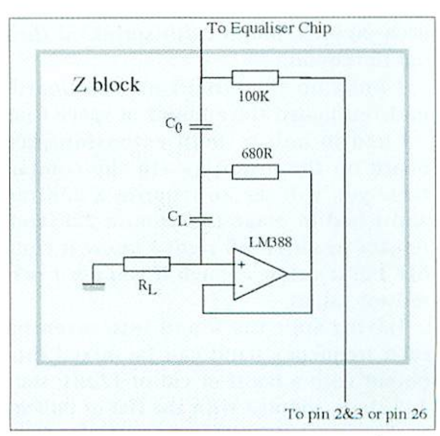


Figure II

mixer on the same printer port without changing the software.

Unfortunately the entire circuit is not quite as simple as Figure I would suggest, as the filtering part has been simplified to a single dotted box labelled Z1 to Z7. Each of these boxes needs to be replaced by the circuit of a filter – shown in Figure II. You can see it is quite simple but we need to make 14 of them which bumps up the complexity somewhat. Figure III shows the pin out of the LM833 operational amplifier – you can see that two filters can be made from each chip. I chose to make the left and right filters using the same chip but any other arrangement is possible.

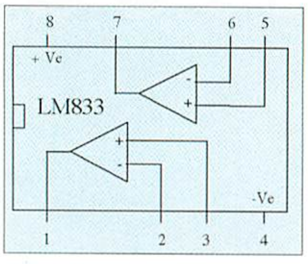


Figure III

The only difference between the filters is the value of three components. You will have to cross reference the values in the table with the filter band to get the correct component values. The bands covered are right across the audio spectrum – in fact Z7, which covers a centre frequency of 16KHz, is right on the edge of the highest frequency I can hear. Indeed it's one of life's ironies that when you can finally afford a

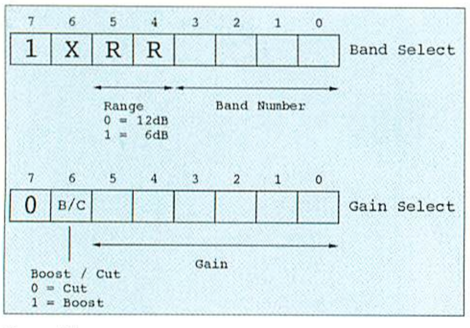
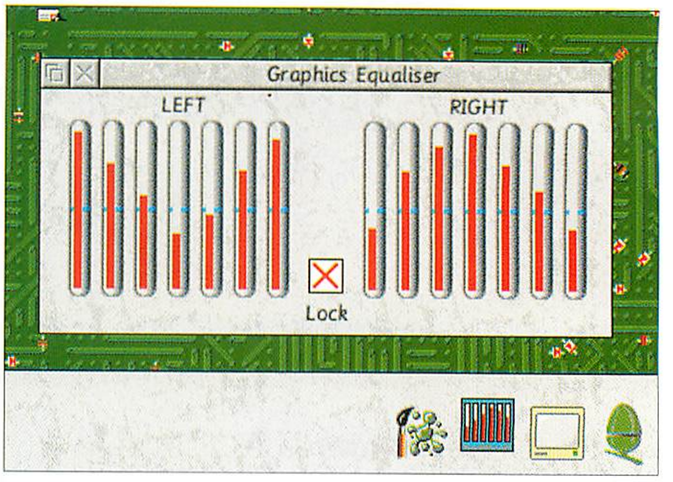


Figure IV

good hi-fi system you haven't got the ears to hear it. Finally the circuit has omitted power supply decoupling capacitors for simplicity. You should have about four of these between each power rail and earth sprinkled throughout the circuit.

I built up the circuit on veroboard and underestimated the amount of space I needed – I had to bolt a small extension piece of board on the prototype. In the component table you will see Z6 requires a 62K resistor and I had to make this from a 22K and 39K resistor in series. All right I know it comes to 61K but it's close enough if you use 1 per cent resistor values.

Having split the sound into seven bands, each frequency band can be mixed into the output with a boost or cut of 12dBs, stable in 1dB steps, coupled with the flat or 0dB setting and you get 25 different settings for each channel. The way the computer controls the chip is shown in Figure IV. First you clock in the channel – select value 1 to 14 – and then that channel's gain. The gain value is not straightforward binary but a strange mixture of bits set and clear. Therefore an array must be used as a look-up code converter to get the correct value – fortunately we can leave this to the software.



On the disc is the software to control this called *!Equaliser*. I know it's a dull title but it does describe its function. It was based on the mixer software of a few months back but it did need quite a bit of modification. There is a slider for each channel for each side of the stereo system. The only other control is the box marked *locked*. When this is ticked sliding one channel on left or right side moves the same channel on the other side. In that way you can set up both sides identically. However, with a cross in this box each side may be set up differently.

When you quit, the channel settings are saved inside the application and restored when it is relaunched. This means it can't be run straight from the archive on the disc without getting an error message when you quit it.

Bringing up the pop-up menu gives the option of setting all the sliders to the middle with a flat response or restoring the start-up value of the sliders. The sliders are altered by simply dragging the red part.

Note, as with the mixer, the equaliser hardware needs to be powered up before the computer is turned on or it is plugged into the printer port. If not, the LMC835 chip can lock up and draw a lot of power and get very hot. This happened once when I was working on it and got quite a bad burn on my finger when I tested how hot it had got – however the silicon survived.

Table I: The filter compnent values

Filter	F_0(Hz)	C_L	C_L	R_L
Z1	63	1uF	0.1uF	100K
Z2	160	0.47uF	33nF	100K
Z3	400	0.15uF	15nF	100K
Z4	1K	0.068uF	6n8	82K
Z5	2.5K	0.022uF	3n3	82K
Z6	6.3K	0.01uF	1n5	62K
Z7	16K	4n7	680pF	47K

You can then plot the audio response of the circuit with last month's frequency plotter but note that the top range of that project was 8KHz so you won't be able to see any effect the top filter makes.

Anyway that about wraps it up for this month. Next time we will leave audio circuitry and look at something completely different. AU

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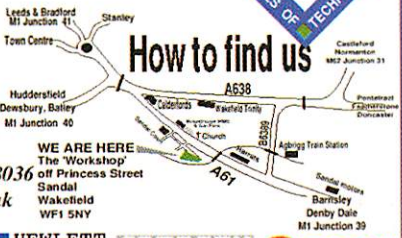
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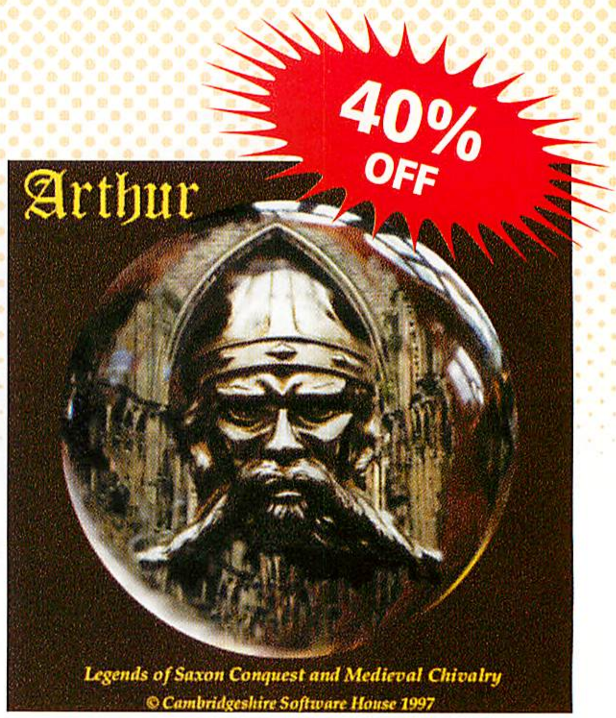
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Reviewed on Page 49 of this issue of Acorn User

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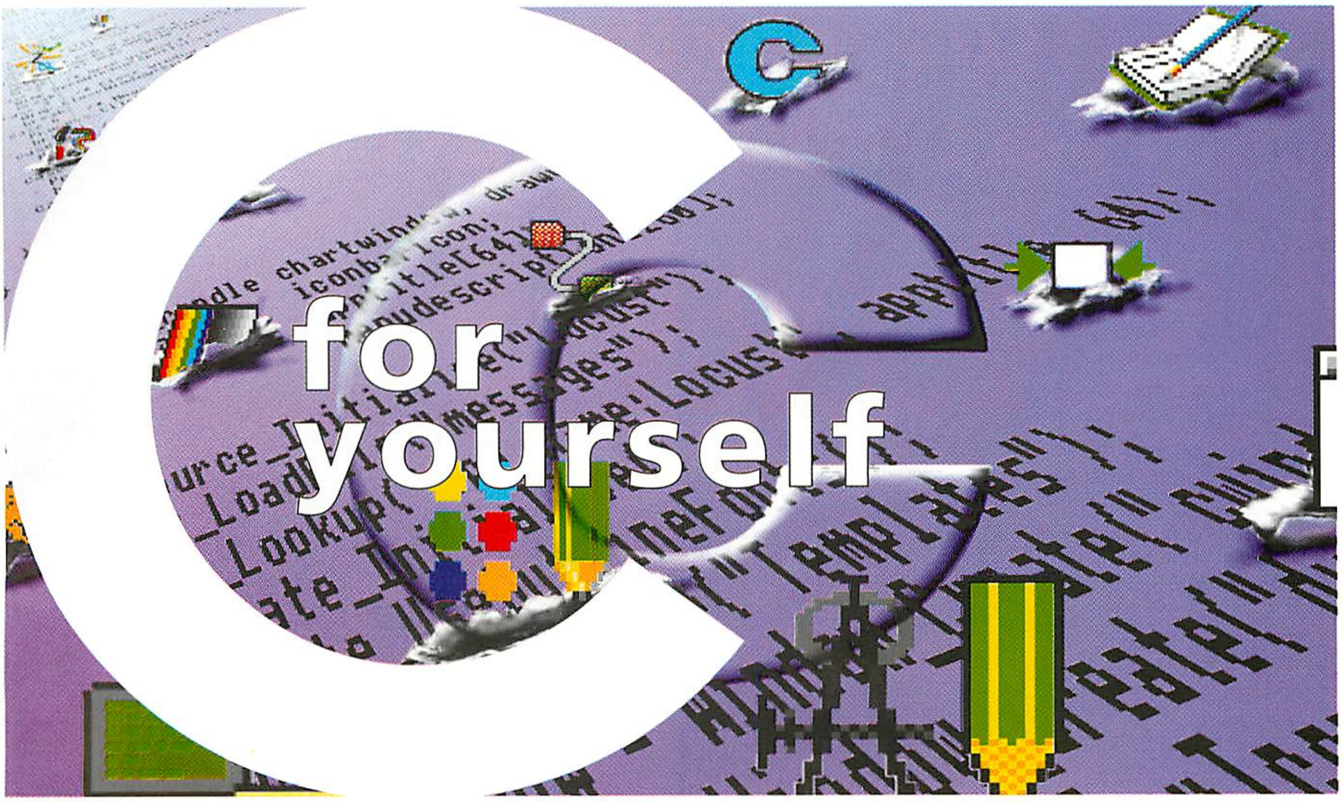
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JACK KREINDLER

C for yourself

Steve Mumford takes a look at plotting sprites within windows

Now that we've covered the mechanics behind plotting a sprite on the screen using the various system calls available to us, it's just a small jump to extend the principles one step more and include their use within a multi-tasking application.

Being able to paint directly onto the screen in this way adds much more flexibility to any program you might care to write as you can dispense with the limitation of having to create your entire user interface using buttons and icons.

When the user creates a window, either through a template editor or directly using **Wimp_CreateWindow**, a bit within the definition is set to indicate whether the WIMP is capable of redrawing the window by itself – that's possible as long as it doesn't contain anything other than the standard buttons and icons.

In order to be able to include user graphics within our windows, we have to unset this bit – the WIMP will then prompt us whenever the window in question needs redrawing. Consequentially, another chunk of housekeeping code is required, and this is described below.

Whether the target window has just been opened or uncovered, or the user has made some change that necessitates the screen to be redrawn, the application is informed of this in the same manner.

A Wimp_Poll event with a reason code of 1 is generated (**Redraw_Window_Request**), and this is passed to your application along with a pre-prepared data block.

It's formatted to be compatible with the **Wimp_RedrawWindow** SWI call, so as soon as you receive the redraw request you should call Wimp_RedrawWindow and immediately update the window before the program continues. Place the pointer to the data block returned by the polling loop in register 1 and call the SWI as follows:

```
_kernel_swi_regs in, out;
int redraw_flag;
in.r[1] = (int) pollblock;
_kernel_swi(Wimp_RedrawWindow, &in,
&out);
redraw_flag = out.r[0];
```

At this stage, the WIMP will have calculated the area of the window that needs updating, and broken it down into a series of rectangles. The program can then interrogate the WIMP and discover these in sequence by entering a short *while* loop.

```
while (redraw_flag) {
/* Redraw window using given coordinates */
in.r[1] = (int) pollblock;
/* Get next rectangle to redraw */
_kernel_swi(Wimp_GetRectangle, &in,
&out);
redraw_flag = out.r[0];
}
```

Every time **Wimp_GetRectangle** is called, a new set of coordinates are supplied in the data block, allowing the invalid area of the window to be determined and redrawn.

The graphics clipping window is automatically set to bound the appropriate area, so you can ignore all the numbers and simply redraw the whole window every time, not worrying whether you're plotting sprites that overlap the visible edges of the window. However, this is obviously not very economical and for graphics-intensive systems, it's better to undertake the task in a more intelligent fashion and only redraw the sections of the screen that you have to. Once the task has been completed, **Wimp_GetRectangle** will return a zero flag and the main body of the program will be able to continue.

At this point it's appropriate to say something about the coordinate system to describe the position of windows as well as the relative positions of their contents. In the past, x and y coordinates have been sufficient at describing graphics on screen; when specifying window position, several more are needed.

Firstly, the corners of the window are specified by measuring x and y distances from the bottom left corner of the screen, giving minimum and maximum values for both x and y.

Conceptually, windows are holes that look onto much larger documents beneath, only showing one small area at a time; to describe this, we need to specify the top left hand corner of the larger document as it would appear on the screen, and the size of the offset between the top left hand corners of the virtual document and the actual window through which we view it.

In order to plot a sprite to the window so it arrives in the right location, we need to convert between coordinates relative to the top left corner of the window's work area (the virtual document described above) and actual on-screen coordinates.

I'll cover this in greater detail next time, the demonstration application on next month's disc shows you how to go about it. AU

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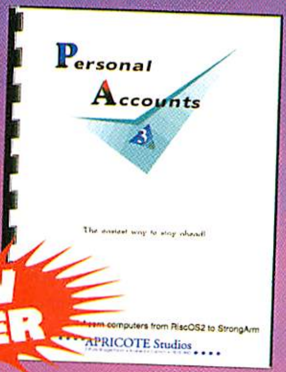
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Viewpoint

This issue of the magazine starts a series of features on Acorn and other major companies (as opposed to one or two-man bands) that produce Acorn software or hardware, this coincides with our features on companies that use RISC OS machines to help run their business.

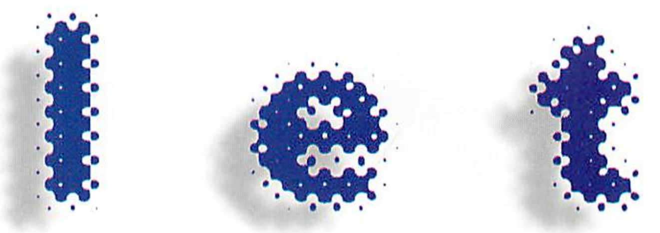
Why would we do this?

Clearly there is a lack of optimism in the Acorn market and, with some people, a kind of desperation is setting in. But I find it hard to credit, two years ago even I believed that Acorn were not long for this world — but that was before all the changes.

In the first year of David Lee's leadership it was difficult to predict the future, there were just too many variables, even Acorn were very unsure about exactly where they were going — they just knew they had to go *somewhere* in order to survive. But the waters have settled and the future is very much clearer.

For a start, Acorn would now find it extremely hard to fail as a business. They are sufficiently well known as a leading-





Acorn, what's an Acorn?

A recent contribution, written by J B Robinson, laid emphasis on a problem that frustrates and infuriates many of the fortunate few who have realised Acorn is infinitely superior. Acorn's advertising policies are very limited within the confines of the Acorn press. Frequently, whenever the topic of computers is mentioned, I rant and rave about the Acorn, the StrongARM processor and so on.

But my words fall on stony ground. The PC world is simply not convinced that any Acorn machine is more than an Acorn Electron or something on the lines of a BBC Master! They do not see it as serious competition. The usual question is "What's an Acorn?" "Perhaps it is a new kind of Amstrad notepad, or perhaps it's one of the very first computers that could add numbers." One PC fan said, "Acorn — nice machine, only one problem — no one buys them ... ha ha ha!"

I have never seen an advert on TV for the Risc PC, I have never seen the StrongARM processor announced to the world as the chip that beats the celebrated Intel Pentium processor all round. Everyone should have the chance to see an Acorn as it really is, few people are fortunate enough to know of them, many who do associate them with the Acorn 3000s that some schools install. It is a serious problem.

A machine with stunning capabilities is not receiving its due. I see the Acorn World as a little club where the fortunate few look down from their ivory tower to see an ocean of PCs crashing all about them — with a few island of Macs here and there. It's time everyone knew that Acorn exists.

William Simpson, Lincoln

Easy scanning

As an amateur Acorn computer user I am always on the lookout for new and interesting ways of expanding my machine's capabilities. I have always been interested in getting a scanner but it's quite an expense so I was hesitant.

However when looking through an electronics magazine I came across something called Scanafax from Avro Pacific. It connects to the fax machine and modem but acts like a scanner, it sounded ideal although it claimed to only work with PCs and Macs, it only cost £35 so I took a chance.

The results are great, used in conjunction with ArcFax it will scan documents easily, I can certainly recommend it as a cheap alternative to the more expensive scanners if you don't need or want full colour and very high resolution.

M. G. Brett West Sussex

edge technology company in the big bad world that it would take a master-stroke of bad planning to bring their success crashing down. It *could* happen but they would have to work hard at it.

Their new business of selling the technology — both hardware and software — that *you* helped them develop (make no mistake, if it were not for the end user Acorn would not be where it is today) is established; the contracts are there; the money is coming in and it will be a lot of money as the years roll past.

But what of the retail business? What of the desktop machines that we love to use? As long as Acorn continue to develop new technology they will continue to produce desktop machines. Why? Because it is a major element in their technology business. Acorn are able to go to their potential customers and say "this isn't vapourware, these are not just ideas. Look, here's a user base of thousands who live and breathe the technology in real, every day applications and environments" and the customers are impressed.

You are not going to be deserted and Acorn are not going to fail. But nothing remains static in this world, we either have an increasing number of RISC OS users, or it's declining.

Then, even as one letter here shows, people persist in complaining that Acorn never advertise. Ignoring the fact, for a moment, that they have experimented here and there to check out response, it is almost a pointless activity.

What you see on TV is *corporate* advertising, not selling products but selling a company name be it Microsoft or Intel, or occasionally Apple. Acorn do not, yet, have money to burn on corporate advertising, and this sort of thing only works when you are already a household name.

However Acorn do not need it, because their customers are now quite likely to do the promotion for them, through the NetComputer and other deals. The new Acorn@Heart™ branding will help to do the job. While Acorn cannot, and will not, insist that a customer who builds a product which contains Acorn technology put the logo on the outside, most will and many already have agreed.

It may be subtle, but it will be pervasive. As more and more products get this branding, here and abroad — notably in the USA — people will start to come to Acorn for their desktop machines as well. Why should they? Application software. The same thing that drives PC users to buy PCs can drive NC users to buy Acorn, they run the same software.

It *is* possible to run NCs as standalones from Zip drives plugged into the parallel port so suddenly the potential market for RISC OS software multiplies by the thousand, if not millions, worldwide. There are several companies who are already checking to ensure their products can be made to function on the NC, because they see the future potential and want to make sure they're riding the first wave to financial success.

The ones who don't recognise this incredible opportunity will be stampeded in the rush from non-Acorn vendors who suddenly realise there are niches to be filled in a completely new market.

So, while I understand to a point, this doom and gloom it is no longer a necessity. Optimism is definitely the order of the day.

Steve Turnbull, Editor

ters

Not quite right

Having read your review of our software *Games Suite* in the last issue of *Acorn User*, I believe a misunderstanding occurred in your reviewer's perception of the nature and purpose of the software. However at the same time a number of valid points were raised which we have since worked to correct.

All of the minor errors, such as the occasional Filer error, and the inconsistencies in the tutorial are already corrected. Over the past few weeks we have been carrying out major revision of the software, and are now ready to release v2.10, which addresses all the points and problems raised in the review, and also includes many more features.

A syntax checker now checks the application before your run it, and produces a written report highlighting most of the possible syntax problems such as misspellings and incorrect references before the game is run. If an error still persists this is handled better at run time and a sensible error message is given.

The editing suite is also undergoing a major revision, with the inclusion of visual features, so walkpaths can be previewed as they are edited, animations viewed in the background through a film preview window, and the time lines now produce a graphic representation of the game's progress. These additional features aid the visualisation process of converting numbers to events that many people have problems with.

The suite has also been extended, with a 'rotational' objects editor, over twice as many key maps, a new resource editor, which simplifies and extends the process for writing introductions, provides more fonts, music and screen fading routines and is in general much more intuitive than the previous version.

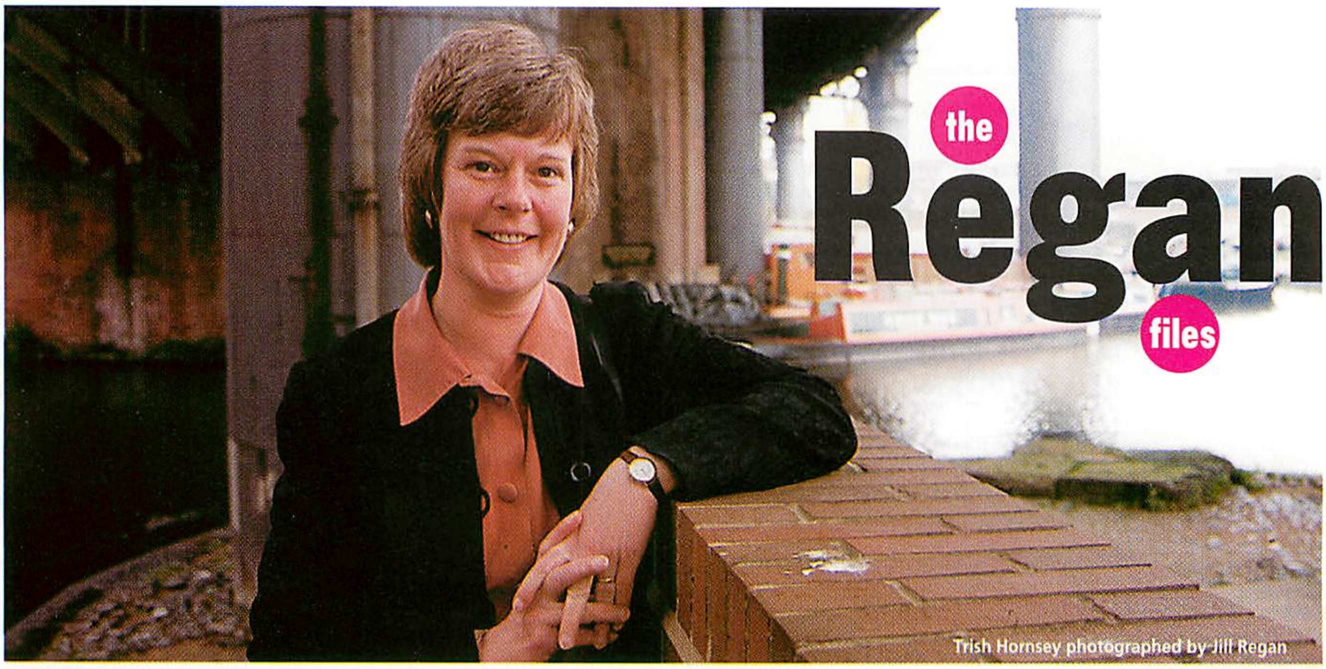
To clarify a few points that were not quite clear in the manual: Games Suite games can be distributed and the runtime code is freeware, so no fees need to be paid to Grasshopper. We are offering a software system for making installation discs and labelling them and so on, for £10. The sound support is provided in two methods, via the sampled voices as mentioned, but also through playback of individual voices from Tracker music formats, allowing an additional 32 sound effects.

Every copy of Games Suite is dispatched with a letter offering support and inviting feedback. We are willing to work with our users, and produce the kind of product that they want to see. The Games Suite is in constant development, and it is usually possible to incorporate requested features rapidly.

As with all our updates users can upgrade to v2.10 for free, either via e-mail or by sending an SAE. New manuals are available for £3.

Ben Ollivere,
Grasshopper Software

the Regan files



Trish Hornsey photographed by Jill Regan

Castlefield, Manchester. Places like this are at the heart of the North's rejuvenation and – if everything goes to plan – soon will be at the heart of special needs education solutions for the rest of the country.

I'm in the crazy atmosphere of the development suite of games company Ocean. I am not here to play games. I am here to meet Trish Hornsey, the development director of Inclusive Technology (IT): a division of Ocean set up last October and run by people who used to be leading lights at SEMERC. Ocean itself is one of the biggest computer games companies in the UK – in fact, it once did games for the BBC Micro, though nothing for the Arc. So, what's a team of special-needs education experts doing here?

'I think being part of a bigger company will pay off; for instance we could not have set Inclusive up without good financial help,' explains Trish. 'We knew the financial director at Ocean professionally before. What is good for us is that Ocean believes we can make it happen.

'It *is* a bit of a contrast. Computer games are a very high risk business; huge investment, and if it works huge pay off. Educational software is somewhat more stable. Ocean believes that home links are going to become stronger and stronger as time goes on. At the moment we work alongside each other but who knows what the future holds? I am sure their programmers have huge chunks of code that they just throw away that would be useful to us. We are already beginning to tap into the graphics side.'

Inclusive's philosophy is to sell schools good quality software. Their focus is – as their name implies – to include children with special-needs in the National Curriculum. For IT's commitment to this you only have look at their Web site,(http://www.inclusive.co.uk) which goes far beyond a catalogue on-line; it's more of a special-needs information service.

Trish was once a would-be doctor and did one year at medical school before changing to do psychology and then becoming a teacher in a special school.

'It was one child. In special-needs and IT you will usually find that it is one child which starts people off. I was working in an assessment nursery in a special school. I was presented with a three year old boy who had athatoid cerebral palsy, which meant he was extremely physically handicapped. He could move nothing except his head and eyes.

'He was very, very bright. At three he was toilet trained; he could not speak, so if he wanted the toilet he would look down at himself and moan. If you missed the cue and he wet himself he would get very distressed. I knew there was something going on upstairs and I wanted to find a way of tapping it.

> **'Computer games are a very high risk business; huge investment, and if it works huge pay off. Educational software is somewhat more stable'**

'We had some computers in school and I spent the next six months as it turned out trying to re-invent several wheels. Then I discovered that the Spastics Society (now Scope) ran a course looking at computers and special-needs. That was a real eye opener. I discovered that a lot of the things I wanted not only already existed but were freely available.

'I got the software and spent a lot of time making switches the boy could use. By the time he was six he could string together sentences on a word-processor. It was great and it got me hooked.

Trish's job as development director means she is responsible for all the products Inclusive do. If they publish or buy in from other places it is her responsibility to select it. If it is an in-house product then she runs a team to draw up a spec. At the end of the day it's her job to make it all work. No easy task.

'We have a few dilemmas. The educational software industry is in quite a difficult position at the moment. We want high-quality resources for UK kids, for the UK curriculum.

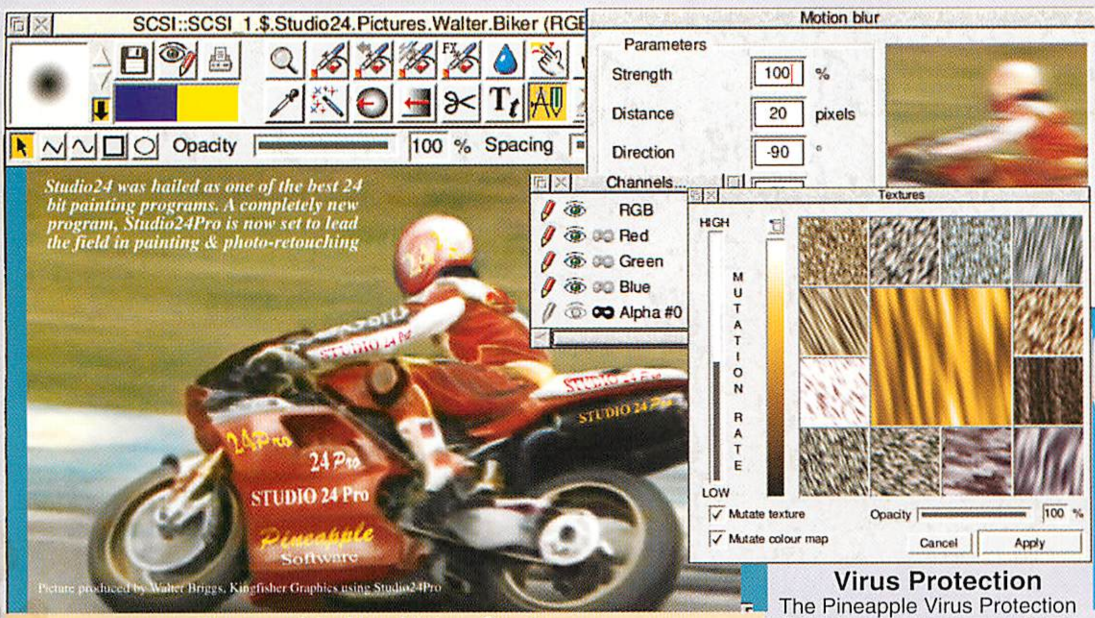
'There are companies, big ones like Microsoft, who are now selling their software in the UK. They are beginning to take it further by versioning it with UK English and changing it to fit in with our curriculum.

'This is a big danger, because these companies are so big they can invest huge amounts of money. They have a world market and versioning is less costly than development.

'There are a number of ways we are trying to tackle this problem. One is that we are working with an American partner to tailor its software for our schools and to work on joint developments with them, so that we can bring things out simultaneously, which will work for our children. Hopefully working together will bring us revenue from the vast US market which will help the kids here'.

It may not be a pure home-grown solution, but at least it will be Trish and not Bill Gates making the decisions.

Jill Regan AU



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!NEW! A new model, the AVK/5 is similar to the AVK/3 but has the added feature of remote mouse operation using the infra red hand held remote control. This enables lectures and demonstrations to be done without having to sit at the computer keyboard.

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540Mb	IDE	£ 99.00
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3.2Gb	IDE	£285.00
1.2Gb	SCSI	£195.00
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3.2Gb	SCSI	£329.00
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Removable Harddrives

IDE Mounting Kit	£ 15.00
IDE Removable Case	£ 10.00
SCSI Mounting Kit	£ 19.00
SCSI Removable Case	£ 10.00
External Mounting Box	£ 89.00

SCSI Systems

SCSI Card	£116.32
SCSI Internal Cable	£ 9.99
SCSI External Cable	£ 19.99
SCSI II Card	£189.00
SCSI II Internal Cable	£ 9.99
SCSI II External Cable	£ 22.32

Monitors

14" CTX	1024x768	£189.00
15" CTX	1280x1024	£279.00
17" CTX	1280x1024	£449.00
17" CTX	1600x1200	£579.00
20" 82Khz SVGA		£1115.00
Iiyama Visionmaster		
17" 0.26mm MF8617E		£599.00
17" 0.25mm MF9017E		£669.00
Acorn		
14" AKF53 Multiscan		£265.00

A7000 Computers

4Mb	HD540	14" Mon	£1099
4Mb	HD540 CD	14" Mon	£1199

StrongARM RiscPC

4Mb	HD1Gb	No Mon	£1139
4Mb	HD1Gbx8CD	No Mon	£1189
10Mb	HD1Gb	No Mon	£1439
10Mb	HD1Gbx8CD	No Mon	£1489

RiscPC monitors

Acorn 14" SVGA monitor	£ 264
Acorn 17" SVGA monitor (.25)	£ 640
Acorn 17" SVGA monitor (.28)	£ 423

PC Cards/StrongARM

	Separately	with RiscPC
DX2-66 Card	£289.00	£169.00
DX4-100 Card	£349.00	£229.00
586-100 Card	£468.83	£351.33
StrongARM	£279.00	£116.32

RiscPC Upgrades

x8 CDRom (RiscOS 3.6/3.7)	£ 89.00
Second Slice (large PSU)	£116.33
Second Slice - no PSU	£ 89.00
RiscOS 3.6 upgrade,	£ 49.95

Memory Upgrades

1Mb Vram (Simtec)	£ 80.00
2Mb Vram (Simtec)	£115.00
4Mb SIMM Ram	£ 19.00
8Mb SIMM Ram	£ 39.00
16Mb SIMM Ram	£ 69.00
32Mb SIMM Ram	£135.00

'Phone for latest SIMM prices !!

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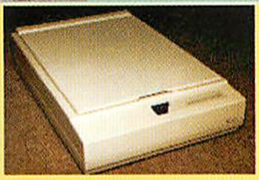
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